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THE BACILLUS ICTEROIDES AS THE CAUSE OF YELLOW FEVER—A REPLY TO PROFESSOR SANARELLI.

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I HAVE no time or inclination for controversial writing, but desire to state my position with reference to Sanarelli's bacillus as briefly as possible. In my paper published in the MEDICAL NEWS, November 13, 1897, I say:

If my bacillus *x* and the bacillus icteroides of Sanarelli are proved to be identical and this bacillus is demonstrated to be the cause of yellow fever, Sanarelli will deserve full credit for the demonstration, and I shall not be disposed to detract in the least from the praise due him for the success achieved as a result of his investigations. If, as he claims, he has obtained the final proof that this is the yellow-fever germ by producing the disease in man (five cases), as a result of the subcutaneous or intravenous injection of filtered cultures, I think we must accept these results as demonstrating the specific character of the bacillus in question. But without this final proof the demonstration would not be satisfactory, notwithstanding the pathogenic virulence of the bacillus when injected into several species of the lower animals. If it were constantly found in the blood and tissues of yellow-fever cadavers there would be little reason to doubt its specific character. But both my researches and those of Sanarelli show that, notwithstanding the most painstaking investigations, this bacillus has not been found in a considerable proportion of the typical fatal cases of yellow fever examined. . . .

In the series of cases studied by me secondary infections were extremely rare. The colon bacillus was found in a considerable number of cases, but usually in comparatively small numbers, and there is no good reason for believing that the fatal result depended upon its presence. But for the fact that in the second case studied by Sanarelli, his bacillus was present in considerable numbers in blood extracted from the finger of the patient the evening before his death, and also, after death, in the blood, spleen, liver, and other organs, it is quite probable that his attention would not have been attracted to this particular bacillus. In this regard this case is unique, both in the series of cases investigated by Sanarelli and in those studied by me; and if this is indeed the bacillus of yellow fever, it is evident that it is usually present in the blood or tissues of yellow-fever patients in very small numbers, or not at all.

In my latest publication (*Centralblatt für Bakteriologie*, May 13, 1899), I say:

The experiments which have been made under my direction in the laboratory of the Army Medical Museum in this city (Washington) have convinced me that the bacillus of Sanarelli and my bacillus *x* have permanent characters which distinguish one from the other and consequently that they are not varieties of a single pathogenic species. I am, therefore, obliged to admit that Sanarelli's researches give no support to the supposition, which for a time seemed to me to have a certain degree of probability, that my bacillus *x* is the specific cause of yellow fever. On the other hand, my researches give no support to Sanarelli's claim. My bacillus *x* was obtained by me, in small numbers, from about one-half of the yellow-fever cadavers examined by me in Havana. Sanarelli, using the same methods, found his bacillus in about the same proportion of cases and also, with one exception, in comparatively small numbers. Both bacilli are pathogenic for rabbits and guinea-pigs—Sanarelli's bacillus more so than my bacillus *x*. But experiments upon these animals fail to give any satisfactory evidence that either bacillus is the specific cause of yellow fever. Both bacilli when injected into the circulation of dogs (5 c.c.) produce vomiting, fever, a hemorrhagic gastro-enteritis with bloody discharges from the bowels, albuminous urine, necrotic changes in the liver, collapse, and death in a certain proportion of the cases.

With reference to Sanarelli's experiments upon man, I would say that the toxemia resulting from the injection of filtered cultures of his bacillus may or may not be identical with yellow fever in man. Further experiments would be necessary to determine this, and especially control experiments with the toxic products of other bacilli of the typhoid and colon groups.

In his first published paper Sanarelli says:

Sternberg thinks that there is probably a localized infection having its seat in the stomach.

In his recent paper in the MEDICAL NEWS, he says:

Primarily, Dr. Sternberg clung firmly to the idea that the seat of the specific virus of the disease was in the intestine. He seemed to have been of the opinion so commonly held by writers at that time, that a certain pathogenic analogy existed between yellow fever and Asiatic cholera, the discovery of whose germinal cause had been such a triumph only a short time before. The symptoms and intestinal lesions which are observed in the two diseases are certainly sufficient to impose such an opinion on the observer, if he looks no further.

These statements are entirely erroneous, and were

disposed of in my paper in the MEDICAL NEWS above referred to, in which I say:

This is a mistake. I have advanced the hypothesis that the germ of yellow fever may perhaps be located in the alimentary canal, as is the case in cholera, and that the symptoms result from the absorption of a very potent toxin produced by it. But this is only a suggestion, and I know of no evidence indicating that there is a localized infection of the stomach. I have carefully studied many stained sections of the walls of the stomach, and have never found any evidence of a localized infectious process, although in a certain proportion of the cases there is evidence of inflammation, as shown by the presence of an unusual number of leucocytes in the submucous coat.

The small intestine commonly contains more or less black matter, either fluid and resembling that found in the stomach, or mixed with mucus and smeared over the mucous coating, especially of the ileum. This, no doubt, comes partly from the stomach, but in other cases is due to passive hemorrhage from the mucous membrane of the intestine itself. This membrane presents arborescent patches of congestion, or portions of the canal may be uniformly red from hyperemia of the mucous coat; the color varies from a pale-red to a reddish-brown, and is usually more marked in the lower portion of the ileum than elsewhere. The large intestine occasionally presents similar arborescent patches of congestion, but it usually has a normal appearance. Finally, we may say that the attention of pathologists has heretofore been so largely taken up with the pathologic histology of the organs which present the most notable changes—liver and kidney—that the histology of the alimentary canal has been somewhat neglected, and further researches in this direction are desirable upon material obtained at the earliest possible moment after death.

It was not until after my failure to find any specific micro-organisms in the blood or tissues that I devoted special attention to the alimentary canal. In my original report (1890) I say:

My first five autopsies, made in 1888, gave a negative result. In Case VI., autopsy four hours after death, colonies of two different kinds were obtained in cultures from the blood, liver, and kidney. One of these was my bacillus *a* (*bacterium coli commune*).

Again, in Cases VII. and VIII., the result was negative; but in Case IX., in which the autopsy was made five hours after death, numerous colonies of bacillus *a* developed in my cultures from the blood, liver, and kidney. The next case in which I obtained micro-organisms from the blood was in No. XV., Havana, 1889. In this case a few colonies of a different bacillus were found.

In Case XVIII. I again obtained a few colonies of bacillus *a*.

Case XIX. gave a negative result, and in subsequent autopsies I did not collect blood from the heart, inasmuch as the material obtained from the liver always contained a considerable quantity of blood and would show the presence of micro-organisms if they were to be found in the general circulation.

A summary of these results shows that I have obtained micro organisms in my aerobic cultures as follows: In blood from the heart, four times in nineteen cases; in the liver or kidney or both, thirteen times in forty-three cases.

It will be noticed that the micro-organisms most frequently encountered were non-liquefying bacilli, my bacillus *a* and bacillus *x*.

We are, therefore, able to assert in the most positive manner that the blood and tissues of yellow-fever cadavers do not contain aerobic liquefying organisms, unless by rare exception, and can definitely exclude the micrococcus of Freire and the tetragenus of Finlay from consideration as possible agents in the etiology of this disease, as both of these grow readily in the culture-medium used in these investigations and both liquefy gelatin.

The non-liquefying bacilli found in a certain proportion of the cases are not in sufficient numbers or sufficiently constant to give support to the view that they are the specific cause of the disease, and the fact that they are not found in a considerable number of typical cases is sufficient reason for excluding them as being directly concerned in its etiology by reason of their presence in the blood and tissues. But we may suppose that they have their proper habitat in the alimentary canal and that the morbid phenomena are due to a toxic ptomain, produced in this situation. Under this hypothesis the occasional presence of these bacilli in the tissues is to be regarded as accidental and as resulting from the emigration, during the last hours of life or post-mortem, of micro-organisms from the intestine, and we have to ascertain whether one of the bacilli found most commonly in the tissues or any other micro-organism present in the alimentary canal is the specific agent we are in search of.

I may remark here that if Sanarelli's bacillus is the cause of yellow fever and is to be found in the blood it could not well be absent from the alimentary canal in fatal cases as these almost invariably show the presence of disorganized blood both in the stomach and in the intestine. But Sanarelli asserts that his bacillus is not found in the contents of the intestine. In my paper in the MEDICAL NEWS I say: "I think it would be very unfortunate if, upon the strength of Sanarelli's negative results, sanitarians should neglect to disinfect the excreta of yellow-fever patients."

In support of his mistaken inference that I have looked upon the intestinal tract as the seat of the infection, Sanarelli says:

That Dr. Sternberg held this opinion is clear, since in his report to the United States Government[1] in his official capacity he submits as one of his conclusions a suggestion for the treatment of the disease by disinfection of the intestinal tract, an alkaline solution of bichlorid of mercury of 0.02 per cent. being employed for this purpose.

[1] "Report on the Etiology and Prevention of Yellow Fever," p. 85, Washington, 1890.

This erroneous prejudice as to the pathogenetic mechanism of the disease was sufficient without doubt to influence the whole course of his researches. For it is evident that Dr. Sternberg yielded to the preconceived notion at that time so generally accepted, that it would be possible to isolate from the contents of the intestinal tract a microbic form that would be constant for the disease.

Sanarelli is not the only one who has made this mistaken inference, which, however, I have repeatedly corrected. In my original report I say:

My principal object in suggesting the formula was to test a decidedly alkaline treatment from the outset of the attack, with a view to relieving the gastric distress and acid vomiting, which is a prominent feature in cases treated by the expectant method, and also to render the highly acid urine neutral or slightly alkaline, in the hope that the secretion would be more abundant and the tendency to suppression diminished. The treatment appears to meet these important indications; and, without in any sense being "specific" to save life by preventing those structural changes which give rise to passive hemorrhage from the stomach and suppression of urine—two symptoms which present themselves in a majority of the fatal cases.

Bichlorid of mercury in a comparatively small amount was added to the formula, not with the idea that it would to any extent destroy pathogenic micro-organisms in the intestine, but as an antiseptic, which might be useful in preventing fermentative changes in the stomach, which would, perhaps, be favored by the free administration of an alkali. The idea has also occurred to me that the specific germ may possibly find a suitable nidus in the acid secretions of the stomach, and in this case the administration of an antiseptic in combination with an alkali would be the most rational treatment. Still I have not given much weight to this idea.

Sanarelli reproaches me with not being willing to yield to the evidence in favor of the specific etiological rôle of his bacillus. I am not influenced in my scientific conservatism by any feelings of jealousy and shall be ready to do full honor to the discoverer when the discovery is definitely established. At present I cannot admit this for the following reasons:

First, Sanarelli's bacillus grows readily in the culture media employed by me in my researches, but in nineteen typical cases of yellow fever in which I introduced into such media blood from the heart of yellow-fever cadavers, this bacillus was not present, the cultures remaining sterile in fifteen. In three of the four cases in which a growth occurred I identified the bacillus found as bacillus coli communis (my bacillus *a*). I strongly suspect that some of those bacteriologists who claim to have found Sanarelli's bacillus have mistaken for it one of the varieties of the colon bacillus.

Second. In my experiments material from the interior of the liver and kidney, containing blood and crushed tissue elements from fresh cadavers, was added to culture media in which Sanarelli's bacillus readily grows, but I obtained a negative result (cultures remained sterile) in 30 out of 43 cases.

Third. Sanarelli's bacillus is fatal to guinea-pigs and rabbits when injected subcutaneously in very minute doses. In my experiments blood from the heart and crushed liver tissue from the fresh cadaver failed to kill eight out of ten guinea-pigs and seven out of eight rabbits experimented upon. I admit that the value of these experiments is impaired by the fact my laboratory facilities did not permit me to keep these animals under observation as long as was desirable.

Fourth. The experiments made by Drs. Reed and Carroll at the Army Medical Museum show that Sanarelli's serum in high dilutions (1–100,000) causes arrest of motion and typical agglomeration (Widal reaction) of the bacillus of hog cholera; also, that serum from an animal immunized against hog cholera, in high dilutions, causes arrest of motion and typical agglomeration of Sanarelli's bacillus; also, that cultures of Sanarelli's bacillus fed to pigs cause the death of these animals, and that the typical lesions of hog cholera are found in their intestine.

Fifth. The blood-serum of yellow-fever patients or of convalescents from this disease does not give a marked Widal reaction with Sanarelli's bacillus, although the blood of an animal immunized by the injection of cultures of this bacillus does give the specific reaction in high dilutions.

Sixth. So far as I am informed the results obtained in the use of Sanarelli's antitoxic serum do not give support to his claim to have discovered the specific germ of yellow fever.

In a letter dated January 20, 1899, my friend Dr. J. B. de Lacerda of Rio de Janeiro, says:

The serum of M. Sanarelli has failed here in Brazil. The results of the experiments which he made at San Paulo have not recommended the employment of this serum. It is neither preventive nor curative.

In a paper recently published in the *New Orleans Medical and Surgical Journal* Dr. P. E. Archinard reports a negative result from the use of Sanarelli's serum in ten cases. He says:

From the above cases, which limit our experience with the anti-amarylic serum of Sanarelli as a curative agent in the human being attacked with yellow fever, we are forced to conclude that this agent, in our hands, has shown no curative powers whatsoever, none of the important and dangerous symptoms of the disease having

been in any way mitigated or prevented by its administration.

Drs. Reed and Carroll are now preparing a report of their extended researches, which have been going on at the Army Medical Museum during the past two years. This report will be published in due time and will give full details as to the experimental evidence upon which they base their conclusion that Sanarelli's bacillus is a variety of the bacillus of hog cholera.

Finally, I would say it appears to me at the present time that, like the colon bacillus and bacillus *x*, the bacillus of Sanarelli is a pathogenic saprophyte which is present occasionally and accidentally in the blood and tissues of yellow-fever patients, and that its etiological relation to this disease has not been established. If, however, the results reported by Drs. Reed and Carroll can be shown to be based upon erroneous observations, I shall be ready to revise my opinion. Truth is mighty and no doubt in the end will prevail.

SOME FALLACIES IN THE MODERN TREATMENT OF NOSE AND THROAT DISEASES.[1]

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SPECIALISM seems to be the order of the day, and not unjustly so. It has its advantages and disadvantages. A man who confines his practice to a certain region of the body is certainly more familiar with pathologic changes in this region than the man who but rarely has such cases come under his observation. The man who treats 100 cases of typhoid fever in a year is certainly more capable of making a clear diagnosis and instituting appropriate treatment than one who sees five cases of the disease. In other words, the larger the experience of any man is in a special line of work the more expert he becomes in that work. But the tendency of the specialist is to become narrowed. Most of them will deny this allegation, nevertheless it is true. I feel that I may be permitted to speak freely since my own daily work for the last six years has been confined to a limited portion of the human anatomy, and I am better able to see my own mistakes and those of my colleagues in the same field of labor. A man can never become a successful specialist until he has become familiar with the whole human frame and the various diseases to which man is heir. This means, of course that no man is prepared to be a specialist who has not been in practice for a number of years, or at least served as interne in a large general hospital. A man, to be a successful practitioner or specialist, must be broad-minded, and broader still must be his knowledge. He who limits his study exclusively to one portion of the human anatomy can never be successful. One organ of the body is but a small portion of the whole, nor does it functionate as a distinct entity. Every part is dependent upon some other part and it requires the harmonious action of the whole for the well-being of each single member. Hence, the truly successful specialist is he who looks beyond the region where his work lies and takes into consideration the relationship existing between every portion of the human organism.

The specialism limited to the diseases of the eye, ear, nose, and throat is perhaps the most popular of all to the young graduate in medicine. He sees in it the El Dorado of long-hoped-for fortune. It is the specialty which, to him, requires the least amount of study and in which his mistakes will be the least noticeable. The question of life and death is not usually involved and, with the exception of the eye, the work is done in closed cavities obscured from the patient's scrutinizing gaze, and he is, therefore, to a great extent, shielded if he makes a mistaken diagnosis. This state of affairs brings specialism into disrepute, simply because this or that patient has one of this class of men who, perhaps, has not only failed to give relief, but has done actual harm. The great trouble to-day is that men go into special work who have not properly qualified themselves to treat the whole human system. They see no further than the little organ to the treatment of which they expect to devote their life. They recognize no dependence of one pathologic condition upon some other diseased state in another portion of the body. In no specialty, I believe, are men found who are less worthy of the name "specialist" than those who set themselves up to treat eye, ear, nose, and throat diseases. It is true that the treatment of this class of diseases appears easy, and perhaps it is so, but the great question to be determined is, What is the appropriate treatment? It is one thing to treat and quite another to treat properly. The nose specialist who furnishes his office with a set of spraying apparatus, a nasal saw, a galvanocautery, and a wire-snare believes himself to be thoroughly prepared to treat all nasal diseases, and in his mind the idea is well fixed that there are no diseases of the nasal passages which cannot be cured by this outfit.

I wish now to discuss what I believe to be some of the fallacies in the treatment of nose and throat diseases. I mean by fallacies the false recognition of pathologic conditions and the wrong remedy for the condition when it is recognized.

On the Use of Sprays.—No throat and nose spe-

[1] Read at the annual meeting of the Georgia Medical Association, held at Macon, Ga., April 19–21, 1899.

cialist feels that he can be considered as such unless he has a condensed-air apparatus in his office, worked either by hand- or by water-power. Sprays in the nose, provided the substance sprayed is the correct medicament, are exceedingly valuable in a large number of cases, but their indiscriminate use in every case is often exceedingly injurious. Even in the few years of my practice I have found that there is such a thing as the "spray-habit," which is brought about largely by specialists who consider that it is necessary for patients to come to their office every day or every other day and be sprayed, until it not only becomes a habit with the patient, but a mercenary habit with the physician. A "spraying out" makes a patient feel better temporarily and in one in whom the nasal chambers have been closed the sensation of opening up is delightful, but unfortunately, there is a reaction and the opened condition does not last. There are two fallacies connected with the use of sprays, more especially in the nose, which I have found to exist with undue frequency among rhinologists. The first is that the pressure used for atomizing the liquids is frequently too strong and the result is that the mucous membrane is injured and, therefore, harm instead of benefit is the result. The mucous membrane in the nose is tender and sensitive, and for this reason the force of any spray should be well regulated. Some patients require a stronger spray than others; as, for instance, in atrophic rhinitis, in which condition irritation of the mucous membrane is considered by some as the rational therapy. But with this exception I know of none. In the second place it has become an almost universal habit to use, without proper discrimination, some oily product as the base of all spray medicaments, in contradistinction to watery sprays formerly used. There are patients who require the use of both, and perhaps frequently at the same time, yet both have their sphere of usefulness.

The "spray-habit" comes most frequently from the use of menthol in the oily menstruum, producing that cool sensation in the nose which is so delightful and exhilarating to the patient. The use of a spray primarily is supposed to be for its cleansing properties, and afterward, but very secondary, for its soothing and stimulating qualities. Now it is a well known fact that discharges from the membrane of both the nose and throat are watery or mucoid in character and, therefore, will not mix with oil. How utterly unscientific is it, then, to try and cleanse the nasal mucous membrane with spray material which is oily. Logically, watery cleansing solutions should be used first and then oily ones, should the case demand it. I hold that spraying of the nasal chambers is never justifiable unless there is catarrhal discharge from the membrane readily recognized on anterior rhinoscopic examination, or when there is an accumulation of mucus coming from some of the contiguous cavities such as the frontal or ethmoidal sinus, or the maxillary antrum. In such cases the spray must be alkaline and watery, for the endeavor should be to simply cleanse the membrane, and such a solution alone will do it. Oily sprays are too frequently used for this condition, and the result is the patient gets the "spray habit" and exceedingly dry nasal chambers. Oily sprays are useful in their place and especially so in acute inflammatory conditions of the membrane of the nose and throat, but in chronic conditions of the same membranes they are almost useless.

The Use of the Electrocautery. — This is an exceedingly useful instrument in the domain of rhinology and laryngology but like sprays it has been abused. In my earlier practice I used the electrocautery ten times where I now use it once. Not that it is not now serviceable, but then I used it for nearly every little enlargement which I found. Its great value in the nose is for the reduction of true hypertrophy of the membrane covering the turbinates when this is pouring out an unhealthy discharge or is so blocking the lumen of the nasal cavities as to prevent thorough passage of air. I say true hypertrophy, since that hypertrophy in the nose which disappears under the influence of cocain is not hypertrophy but nothing more than passive congestion or stasis. In the latter case it is foolish to use the electrocautery, for here is a condition in which the cause must be treated, and in a great many cases it is far removed from the nasal cavities. It may be a reflex phenomenon from various constitutional disorders, such as anemia, chlorosis, torpid liver, ovarian and uterine disease, heart lesions, disease of the kidneys, chronic constipation, and from nearly every constitutional dyscrasia.

If the specialist has had no experience in general medicine he never sees beyond the nasal cavities, but will use topical applications ad nauseam, to the weariness of both the patient and himself. Equally as important as when to use is the manner of using the electrocautery. I have seen many nasal cavities which have been made far worse by the use of the cautery than had it not been used at all. The trouble in many cases has been due to the too extensive use of this instrument with the result that the inflammatory reaction set up at the point of cauterization has been so severe that a dense band of cicatricial tissue extends clear across the lumen of the nasal cavities, and thus acts as a barrier to free respiration. There is no excuse for the production of this

condition if the physician has learned the proper technic and knows when the cautery should be used. "A good man can sometimes be made the unworthy instrument for the production of evil," and only too well can this aphorism be made to apply to the electrocauterist.

Another error frequently committed is the too frequent removal of enchondromata or cartilaginous spurs and exostoses or bony spurs from the nasal septum. When the full-fledged nose specialist opens his office for the reception of patients the first thing he does is to brandish his bright metallic saw and remove every little excrescence he finds on the nasal septum. Even now I can feel the enthusiasm which coursed through every fiber of my being when in the first few years of my practice I could discover a septal spur. But unfortunately some of my patients were made to suffer for this enthusiasm. With ripened experience I find that fewer spurs should be removed from the septum, and only in those cases in which other well-recognized methods of treatment have been tried and failed. My reasons for this are that after a spur has been removed from the nasal septum scar tissue is necessarily left as a result and this will always give the patient a point where mucus and scabs will form, to his constant annoyance, sometimes proving more annoying than the slight obstruction itself. It is very alluring to the young specialist to perform this little operation and thereby pocket a nice little fee, for the hope of material gain is sometimes not the only fault a physician will have.

Frequently, too, the specialist does not recognize the difference between dislocation of the columnar cartilages and an ordinary enchondroma, but picks up his saw and removes all anterior excrescences alike, leaving a place which will always be annoying to the patient. Close discrimination and the knowledge of when to operate should be the aim of every physician, be he specialist or not.

In conclusion, I have but a few words to say. The greatest trouble with physicians in general is, I believe, the failure to study minutely the history and symptoms of every patient before prescribing or administering treatment. The failure to make a proper diagnosis is the cause of most of the failures in a physician's work, and a physician to be successful must be a close, practical, and discriminating student. Men who have large practices are so apt to become routine in their methods, instead of studying each individual case, that they are often unsuccessful when just the opposite could be the case. Not long since I saw a case of paresis of the left vocal cord in a man who had been treated for three months for chronic laryngitis. His chief symptoms were hoarseness and fatigue after the use of the voice. Now this man had a difficult larynx to examine, but after repeated trials I was enabled to find the real cause of the symptoms. The physician who had been treating him recognized the hoarseness, and as it was chronic in character he simply made a snap diagnosis and so treated the patient without taking the tedious trouble to overcome a laryngeal spasm and obtain a clear laryngeal picture. Hence, I say there are two fallacies in medicine: first, that which is the result of ignorance from the lack of previous training and study; second, that which comes from making a snap diagnosis without minutely studying the case. Both classes are guilty, and in the long run the beneficent public will find out the physician upon whom they may depend.

THE IMPORTANCE OF A KNOWLEDGE OF THE PHYLOGENETIC DEVELOPMENT OF THE CHILD IN THE PREVENTION OF CHILDREN'S DISEASES.[1]

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IN this age of world encircling intellectual activity, in which mind has penetrated so many of the secrets of Nature, and by directing its forces has secured such a great dominion over matter; when the thought and discoveries of the whole world are at the command of each individual worker we are prone to lose sight of the fact that while mind controls and directs matter, matter, on the other hand, exerts a powerful influence on the normal development and integrity of mind. Surrounded as we are by free schools, almost universal educational facilities and a public sentiment which, subordinating nearly everything else to the cultivation of the intellect, rushes the child, scarcely out of the cradle, into the kindergarten and thence through various grades of schools, colleges, and universities until he or she emerges at the age of twenty-five or thirty years a finished product of our modern educational system, we are apt to forget that cultivation of the intellect or cramming the mind does not comprise the whole of the development, and indeed, that unless very carefully guarded, by overlooking or ignoring the proper training and development of the body as well as the laws governing the development of the mind in the race such training may do infinitely more harm than good.

The child, instead of being a "little man" with the same thoughts, feelings, inclinations, capacities and powers, only on a smaller scale than a man, is, in truth, an altogether different being, and may be aptly characterized in his various stages of develop-

[1] Read before the Colorado State Medical Society at Denver, Col., June 20, 1899.

ment as an epitome of the development of the race. He passes through the successive stages of savagery, barbarism, and semi-civilization before attaining to the full civilization in which we live. During this progress the spectral forms of his dead ancestors surround him on all sides, and the mighty mental accumulations and beliefs of a long forgotten past impress upon him the various stages of credulity, inquiry, faith and full blown reason through which these ancestors have passed. With these facts fully impressed upon the mind, and thoroughly grasping the great truth that a symmetrical development of all the powers,—physical, intellectual, and moral,—is necessary to the greatest happiness and welfare of the human being, let us see whether our habits of living and educational methods accord with these fundamental laws of development, and if not, in what way the physician can help to point out the remedy.

As before indicated, the child is not a "little man." In both organization and function there are great differences between the two, and hence their nature and training should be different and made to conform to their organic and functional capacities. The glands, heart, lungs, muscular and osseous systems of the child possess a high degree of organic and functional perfection, and this would logically seem to indicate that the proper exercise and development of these various organs and systems is the rational and proper occupation of the child during childhood and early youth. In support of this inference it may be said that in the savage and barbarous stages of development of the race to which the young child corresponds these organs and functions are developed to a high degree of perfection. Such things as weak flabby muscles, flat chests, failing hearts, and impaired digestive organs were unknown, because their existence would have meant extinction to their possessors.

The muscular, osseous, and respiratory systems were developed to a high degree of perfection which was attained, not by disuse and confinement in ill-ventilated rooms for a considerable part of the day and the whole of the night, but by a careful and systematic exercise of the organs undergoing development. But while the physical organization was systematically developed and attained a high degree of perfection, and the special senses, especially the sight and hearing, were carefully trained from the earliest childhood until they became phenomenally acute among savage races, the intellectual development in many particulars remained in a rudimentary state. The powers of continuous mental application, abstract reasoning, and broad generalization were unknown to the savage, and were only acquired by the race through the slow, gradual process of evolution.

In support of the proposition that the young child represents and epitomizes the far away savage stage of the race from which he sprung, we have the further fact that while the organic development and functional capacity of his heart, lungs, glandular organs and muscular and osseous systems have reached a high degree of perfection at birth, on the other hand his nervous system is in a very immature and undeveloped state. The brain of the young child, as compared with that of the adult, contains a larger percentage of water, is softer, more easily irritated, and is much sooner fatigued on mental exertion; but, on the contrary, the perceptive faculties whose development depends on the training of the special senses are keen and alert and attain a high degree of perfection if given an opportunity in childhood to develop in accordance with the laws impressed by Nature upon the race throughout the ages.

With these principles clearly in mind let us see what application can be made of them by the physician in warding off physical and mental ills, and helping the individual and the race to attain the highest physical, intellectual and moral perfection and happiness. When we consider the phylogenetic history which the child represents at the time of its birth, the æons of time, and the enormous evolutionary progress through which it has already passed we can have some appreciation of the force and wisdom of a remark once made by Dr. Oliver Wendell Holmes, that in order to treat the child successfully, one ought to begin two hundred years before it is born. So strong are hereditary tendencies that no matter how favorable the environment may be they influence either for weal or woe the individual and his offspring for generations. This brings us to the first fundamental proposition, *viz.*, that in order to reach the highest development and the most complete living the individual should be well born; that is, both parents at the time of procreation should be in good health and free from all taint of tuberculosis, syphilis, carcinoma, or other hereditary or communicable disease or constitutional predisposition to the same. Then during pregnancy the mother should obey the laws underlying good hygiene and correct living in the matters of proper clothing, diet, exercise, and the avoidance of all stimulants and narcotics, as well as late hours and undue emotional excitement which has a peculiarly pernicious influence upon the rapidly developing fetus. One night of dissipation may cast a shadow over a thousand years of the phylogenetic history of the rapidly developing embryo. After

birth the infant should be nourished at the maternal fount designed by Nature for its sustenance, and if the mother has been properly cared for during pregnancy she will in almost every instance have an abundance of milk, and it will be a rare thing indeed to be obliged to feed the child on cow's milk, or the many nostrum foods with which the market is flooded. Then, too, it should be zealously guarded against poisoning by stimulants and narcotics in any form. Opium and alcohol in all their varied forms, with their siren and delusive promises should be forever banished from the nursery and the child at least be given an opportunity to select its own drug habits in later years without having them forced upon it at this early age.

Right here I want to make one suggestion: as you all very well know, water is the great solvent on which the system depends to convey nutritive material to every cell and tissue of the body, as well as to remove their accumulated waste and broken-down products. These cells and tissues are surrounded by dialyzing membranes through which a constant endosmosis of nutrient material and an exosmosis of retrograde products is going on. An abundance of water is necessary at all ages to keep these membranes in good working order, but especially is this true in infancy and childhood when the assimilative and eliminative functions are so active. Often young infants cry from so called colic, and are dosed with brandy, paregoric, or some such abomination, when they are suffering from thirst, and a few spoonfuls of cold water will relieve the difficulty and they will fall into a peaceful sleep. All young children should have plenty of pure water at regular intervals.

The clothing should be made so as to give free movement to the limbs and permit a natural and unrestrained development of all the organs and functions of the body. The young child should have at regular periods an abundance of plain, non-stimulating food and plenty of exercise and spontaneous play in the fresh air and should at an early age be trained to habits of regularity in attending to the functions of the body. As childhood is the time of active development, and as sleep is Nature's great upbuilder and restorer children should have an abundance of sleep during all these years and especially while attending school.

All stimulants and excitements, such as late hours, children's parties, and the many artificialities of our so-called advanced civilization which tend to bring about a premature maturity should be strictly avoided. During childhood, when their perceptive faculties, memory, and imagination are active, children should be brought in close contact with Nature from which they will gain far more physical strength, mental power, and wisdom than can be obtained from the formal methods and conventionalities of most of our schools. And right here I desire to enter a protest against the long hours, continuous mental strain, cramming methods, and forcing processes of most of our modern schools. Scarcely is the child out of the cradle before it is sent to a kindergarten school; here if it is so fortunate as to have a teacher who understands and is thoroughly imbued with the true spirit of Froebel's teaching, it passes a happy time, and receives much benefit. Its books are plants, flowers, trees, fruits, birds, insects, and the various objects, animate and inanimate, of the external world by which it is surrounded. The everlasting hills, rising in majesty and grandeur, the soughing of the wind among the trees, the murmur of the brooks, the glorious sunsets, the autumn forest with all its gorgeous hues and kaleidoscopic changes,—in short, the almost infinite variety of objects and the innumerable beauties of Nature can be made most impressive sermons by the true kindergarten teacher,—sermons which will sink deep down into the soul of the child and leave an impression on its body, its mind, and its character which the storms and vicissitudes of life will never obliterate. But, alas! such teachers as we have in mind are like angel's visits—rare, indeed—and come to us like a ray of hope from the great beyond. In the majority of instances even the life of the kindergarten is smothered by the blighting curse of formalism, and instead of being a blessing it is made a curse, and through ignorance or disregard of the most rudimentary physiologic laws lays the foundations of physical defect or disease.

But if this is true of the kindergarten, what shall be said of the average primary school? In the words of Dante, there should be inscribed over the portal "He who enters here leaves hope behind," because from my observation and information about our schools, from the time the pupil enters the first primary grade until he completes the grammar-school course he is continually subjected to such a grind and cramming for examinations that he must indeed be made of stern stuff if he does not emerge from this course weakened both in body and mind. The object of all true education should be a well rounded, symmetrical development of all the powers,—physical, intellectual, and moral—of the individual; but in the face of this truth which is acknowledged by all educators worthy of the name we see children from six to fifteen years of age during the time of intense developmental activity subjected to a course of study which, in many instances, is entirely beyond their comprehension, and a source of

constant irritation to their immature and unstable brains. Especially to be deprecated is the everlasting number work and arithmetic drill which appears to have become a mania with the greater number of the teachers in our schools to-day. From the time the unfortunate child enters the first primary, through the eight long years until he emerges from the grammar course, he is subjected to a continual grind in number work, problems, and examinations. Morning, noon, and night these are a veritable "Old Man of the Sea" to them, hanging like a pall over their hours of leisure and even invading their dreams; they become not only a menace to the health and happiness of the children, but also a nuisance to their parents who cannot enjoy a quiet half-hour because a puzzled child cannot solve a long list of problems far beyond its comprehension, and appeals for help.

But, after all, what results are attained from all this work, worry, and grind? I believe I am justified in saying that they are nearly always inadequate, and often a dismal failure, and that any eleven- or twelve-year old pupil who had never looked into a written arithmetic, but who had been carefully drilled in mental arithmetic, can do better work and obtain a clearer comprehension and more thorough grasp of the subject in three or four years than the struggling child obtains by its eight years of arduous and detestable toil. Then, too, the system of examinations in vogue in so many schools is a veritable *bete noir* to the pupils who are kept in a constant state of worry and irritation and subjected to a continual nervous strain. The work, instead of being inspired and vitalized by a love for truth and a desire to penetrate and understand the secrets and laws of Nature, becomes a mere mechanical cram and filling-up process to pass the examinations. This sort of work, as every one knows, has not only little real educative value, but by leading to makeshifts and subterfuges of various kinds as well as downright cheating degrades the pupil. Healthy mental and physical growth and activity are conditioned on an enjoyment or appreciation of the work being done. A distasteful task or one done under compulsion fatigues the mind much sooner and leaves a much more evanescent impression than one which arouses the pupil's enthusiasm and engrosses his whole attention.

When the teacher so directs the pupil as to call his physical and mental powers into play simultaneously the dry rot of formalism and routine vanishes as if by magic from the school, and instead of the tired disgusted look on so many young faces produced by the mechanical leveling process, which by confining within restricted bounds reduces all to the same plane of mediocrity, we see the flashing eye, the eager intent purpose, and the whole soul of the pupil aroused by a noble enthusiasm. Who will say that in true educative value one hour of such work is not worth weeks, nay months, of spiritless cramming?

Nor are spontaneity and interest less important in physical than in mental work. Free, unrestrained, spontaneous play in the open air is of infinitely greater value in developing the body than any indoor formal exercise, although properly directed gymnastic exercises, if subordinated to outdoor sports, can be made valuable adjuncts. So many pitfalls and dangers lie hidden in the pathway of the rapidly evolving child that in order to guide him wisely and safely through the intricate labyrinth, to avoid the Scylla of physical ills on the one side, and the Charybdis of mental evils and abnormalities on the other, it is necessary that the physician should at least have a clear outline knowledge of his evolution and know something of the physical and mental characteristics and potentialities impressed upon him throughout the ages.

MEDICAL PROGRESS.

Separation of the Symphysis Pubis During Labor.—RUTHERFORD (*Louisville Jour. of Surg. & Med.*, June, 1899) reports the occurrence of the above rare accident in a woman aged twenty-eight years. She had had three previous labors, in two of which the child was delivered by forceps, while in the third craniotomy was necessary. In the fourth such strong traction was made upon the forceps that the physician felt something break. The forceps were removed, the uterus was kneaded, and the child was born spontaneously. Examination of the mother showed that the pubic bones had been separated at the symphysis. Recovery was tedious and complicated by septicemia, but was finally complete.

Apex Dulness without Pulmonary Tuberculosis.—KERNIG (*Centralbl. f. Inn. Med.*, June 10, 1899) has found dulness in the apices of both lungs in patients who have been in bed for a long time with a wasting disease although no local pathological pulmonary condition was present. This fact was confirmed by autopsy in a number of cases. An observer might easily suppose that incipient or healed lesions of phthisis were present. The dulness is explained by the fact that the long stay in bed diminishes the amount of air in the apices so that the upper limit of the lung sinks and may even be retracted below the clavicle.

Operation for Congenital Phimosis.—POUSSON (*La Semaine Medicale*, June 28, 1899) insists upon the desirability of obtaining primary union after operations for phimosis, as cicatricial bands and adhesions, especially in

the neighborhood of the frenum, will give trouble. His own operation is performed as follows: After disinfection an elastic catheter is wrapped twice around the penis back of the glans in order to control hemorrhage. A sound is introduced under the prepuce to break up any adhesions. The prepuce is seized with two clamps, one applied dorsally and one ventrally, and drawn forward. A fenestrated clamp is then applied transversely to the whole prepuce and back of it from eight to twelve threads of silkworm gut are passed through the flattened prepuce from side to side. The distal portion of the prepuce is then cut off and the sutures for the whole wound being in place are cut and tied. An extra stitch or two will be necessary at the frenum. The elastic catheter is removed and hemorrhage stopped by a hot antiseptic solution. An iodoform salve is smeared over the suture line. The stitches are removed on the fourth or sixth day. The results of this operation have been eminently satisfactory.

Anchylosis of the Jaw Due to Interstitial Myositis.—SEGGEL (*Duetsch. Zeit. f. Chir.*, May, 1899) describes a case of anchylosis of the jaw of rather unusual character. The patient was a woman aged forty-eight years who lost all of the molar teeth on the left side on account of caries. They were pulled out in a rough manner and marked inflammation followed each extraction. Three years after their removal the patient was exposed to a severe wetting and was thoroughly chilled. The left side of the face swelled badly and this swelling and pain lasted for more than three months. From that time on the cheek never regained its normal size but grew gradually larger without pain until it was impossible to open the jaw. A diagnosis of sarcoma of the ascending portion of the jaw was made and an extensive resection of the bone and soft parts, including the whole of the parotid gland, was carried out. Complete facial paralysis of that side resulted. The wound healed well and in six weeks the patient could open her mouth nearly an inch. The tendency of the jaw to fall to the right side was counteracted by a plate with an inclined surface. Microscopical examination of the excised muscle showed that its fibers were separated by a large amount of cicatricial tissue and the fibers themselves were atrophied. The question of syphilis, after careful consideration, was rejected. The lesions appeared to be due to traumatism at the time of the extraction of the teeth and to the inflammation caused at that time and after the exposure to the weather. Several similar cases have been reported, although usually anchylosis of the jaw is due to syphilis or to myositis ossificans progressiva or rheumatism.

Partial Retention of Urine.—WARDEN (*Edin. Med. Jour.*, July, 1899) says that the recognition of the condition of a bladder incompletely emptied by the urinary act is all important, although by no means easy. More than seventy-five per cent. of all cases of retention are due to prostatic enlargement. Complete retention is the late phase of the condition in these patients, while incomplete retention is very gradually established and often not recognized for years. The early symptoms therefore should be carefully watched for. These are nocturnal polyuria and persistent digestive troubles. Everything which favors local congestion, such as prolonged lying in bed, too sedentary a life, too rich a diet, a surface chill, disregard of Nature's call to urinate, sexual indulgence, tends to bring on an attack of retention. The bladder should be evacuated slowly and if there be any pain during the process, it will be well not to draw the urine completely off but to inject small quantities of warm boracic solution until it comes out as clear as when it was injected. In this manner the urine may be entirely withdrawn without emptying the bladder. If it is difficult to pass a catheter every two, four, six, eight, or twelve hours, as may be needed, it should be tied in, for artificial evacuation may be required for days. The golden rule is to empty the bladder often and aseptically for a considerable length of time. If the early period of prostatic enlargement be tided over successfully, one may be spared the greater anxiety of later complications. As the stagnation becomes more chronic, the complications and alterations in the general health rather than in the local condition make themselves felt. The bladder may consequently escape examination for months, although in all obstinate gastric derangements it is well to suspect and search for some intoxicating agent. When stagnation becomes so extreme as to be accompanied by obstinate distention of the bladder, it forms the most serious, most intractable, and yet the most overlooked of all varieties of partial retention of urine. The distention extends throughout the whole urinary tract from the bladder to the kidneys and, although in the beginning there may be no infection, the fundamental disorders will soon become organic. The patient's tongue is red and dry so that swallowing is intensely distasteful. There may be vomiting and diarrhea or constipation of an obstinate form. The pain, loss of flesh and appetite, together with the cachectic appearance and age of the patient, often suggest to the physician the diagnosis of cancer of the stomach. Inquiry will show that these patients are passing large quantities of urine, generally about one hundred ounces in the twenty-four hours. The urine is usually pale and clear. It cannot be too dogmatically stated that when these three symptoms—polyuria, frequency of micturition, and grave digestive troubles—are present the cause is almost sure to be a bladder which the patient cannot completely empty. Evacuation of the bladder should be begun slowly and very cautiously and may be increased to three or four times in the twenty-four hours if all goes well. The catheterization should be of such frequency that the patient is conscious of no strong desire to micturate, and upon each occasion a small quantity of solution should be left in the bladder. If infection is present, the bladder should be washed out with boracic solution or silver nitrate, $\frac{1}{1000}$. Along with local treatment the diet should be a generous one. Much milk, beef-juice, custards, eggs, etc., and bitter vegetable tonics and saline laxatives should be administered. Healthy out-of-door exercise in moderation is also recommended. If these principles of treatment are intelligently followed, excision of the prostate and castration can be reserved for intractable cases.

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SATURDAY, AUGUST 19, 1899.

THE BRITISH MEDICAL ASSOCIATION MEETING.

BRITISH and American medicine have been drawing closer and closer together for many years. The meeting of the British Medical Association in Canada two years ago gave progressive American physicians a living interest in the annual meetings of that body. The general course of events since that time has served to bring the two nations closer together in all their interests and community of language in the midst of strife has proved a bond of union more vital, though unsuspected, than would have been credited before the event.

We feel, then, in devoting considerable space this week to the proceedings of the annual meeting of the British Medical Association, which was held this year from August 1st to 4th at Portsmouth, England, that we are but responding to the wishes, expressed and unexpressed, of many of our readers who are anxious to know the latest views of the English-speaking branch of the profession across the water. The interest of the meeting is well reflected in the abstracts from the official addresses which we publish, and which serve well to show the trend of English medical opinion.

The conclusion of the President's address, in which he dares to prophesy a death-rate of 10 to 12 per 1000 for the population of our great cities before the new century is very old, is especially interesting. He does not ground his hopes on any new system of sanitation or tenement-house reform, but on the more intelligent and complete application of present methods. What is needed much more now than elaborated systems of improvement in the dwellings of the poor in cities is the intelligent cooperation of the inhabitants of the poorer quarters of our cities in the schemes for the amelioration of their sanitary condition. No amount of reform would be permanently successful without this. It will not require much teaching, but somehow an effectual recognition of how much they are able to make life more pleasant and more livable for themselves and families in the enjoyment of health, by the observation of simple sanitary measures, must be brought home to all the population.

The Address in Surgery contains a plain statement of certain facts with regard to the status of medical officers in the British Army that may well serve as an excellent lesson for our Government. We have entered upon a phase of our development as a nation which seems inevitably about to require a larger number of soldiers on the active list than before. It will be well to learn by British experience rather than our own the danger of neglecting the medical corps of the army. The necessity for keeping the medical corps at the highest possible condition of efficiency is well stated by Professor Ogston and the corollaries of that proposition, that army medical positions must carry with them the honor, rank, and emolument necessary to attract and retain the very best intellectual material from among the young medical men, are well and effectively brought out.

The Address on Tropical Medicine is one of the most interesting and complete of the series. England has taken up the white man's burden and English physicians at home are realizing their share of it and that on them and their work must depend the discoveries that will lift from the tropics the awful pall of indigenous disease which now makes them the tomb of so many Europeans. There is a lesson here, too, that we Americans may well take to

heart. We are entering on a period when many of our own citizens will deem it advisable to take up a tropical residence. Considering the proximity of our southern shores to tropical countries we have not as yet done the work in tropical diseases that might be expected of us. Especially the opportunities provided by our great ports of entry have not been used to as much advantage as they should as regards the opportunities they afford for the study of tropical diseases. Here is one of the great openings for American medicine in the new century.

CEREBROSPINAL MENINGITIS AND ANTERIOR POLIOMYELITIS.

WE called attention to the fact not long ago that a series of epidemics of cerebrospinal meningitis were being reported from various parts of the country. We took occasion to point out about the same time the very practical medical importance of the careful study of all circumstances connected with cases of the disease and the benefit that might be anticipated from detailed reports of various epidemics. Our suggestion was accepted in certain quarters and we have had the opportunity to present to our readers accounts of a series of epidemics of the disease.

One thing is clear beyond a doubt, that this year in a number of different parts of the country, there has been an incidence of the disease quite unusual in its frequency and virulence. The conservative opinions of old practitioners would seem to indicate, however, that they are not surprised to meet with cases of the disease occasionally in their practice and that the disease must be considered in a way as endemic among our poorer population, at least in the larger American cities. The interesting question, then, is, How does the disease-germ maintain its existence in the interval between epidemics? Does it perhaps masquerade in the meantime under the guise of some milder or at least quite different form of disease and so escape recognition?

We have pointed out that at least one very conservative clinician in Europe has demonstrated the presence of the meningococcus intracellularis which is now generally accepted as the specific germ of cerebrospinal meningitis in the cerebrospinal fluid obtained by lumbar puncture from recent cases of acute anterior poliomyelitis. It is interesting to note, then, that following the report of a number of epidemics of cerebrospinal meningitis throughout the country, there should come accounts of an unusual incidence of anterior poliomyelitis in children this season. The daily newspaper press has had reports of a number of cases of this disease occurring, as has been noted not infrequently before, almost as an epidemic in some places. In the larger cities, as here in New York and in Chicago, we understand there is an impression that more cases of the disease are seen in private practice than usual.

Of course this does not connect the two diseases with any assurance, but it makes the study of their relations doubly interesting. Smallpox and chickenpox are usually considered as very far apart yet the Vienna School of Dermatology has not given up teaching that they are due to the same virus modified by conditions. Professor Senator of Berlin, a most conservative observer, says that whenever an epidemic of chickenpox occurs among the patients who come for treatment to his Polyclinic he expects to hear within the next few days of smallpox cases somewhere in the city and is seldom disappointed in his expectations.

Whether cerebrospinal meningitis and acute anterior poliomyelitis hold some such relation as this to one another will make an interesting question for study. We shall be glad to receive accounts of epidemics or sporadic cases of acute anterior poliomyelitis in which some connection with cerebrospinal meningitis seems possible, or in which symptomatic or other conditions seem to connect them.

The discussion of the question must serve to throw additional light on two very important diseases of children, in which the need for more light is only too evident.

ECHOES AND NEWS

Legacy for the University of Bonn.—Herr O. Holterhoff, a banker of Hannet, a small town in the German Rhineland, has bequeathed his property, estimated to be worth 1,000,000 marks (about $240,000), to the German University of Bonn.

Professor Roentgen Called to Munich. — Professor Röntgen of X-ray fame has received a call to the Chair of Physical Science at the University of Munich, Bavaria. He at present holds the same professorship at Würzburg, and recently refused a call to a chair at Leipsic. It is not thought that he will leave Würzburg to accept the present call.

A New Feature in Bacteriology.—One of our non-medical contemporaries is responsible for the following: Mrs. Malaprop's country visitor had a sore back and her kind hostess insisted on her seeing a distinguished bacteriologist because, as she said, she had heard so much about recent advances in backteriology that she felt sure he would do her friend good.

Dangers of Medical Practice in East London.—It has always been understood that a doctor is safe from attack by nocturnal marauders, but the experience of certain physicians in East London recently proved that either this immunity never existed or that it no longer passes current. In consequence some of the physicians go about armed after dark while a greater number refuse to leave their offices unless adequately protected.

Medicine and Religion.—The Russian authorities limit the number of Jewish physicians to five per cent. of the total number of physicians engaged in practice. This is not a law of the government but merely an act of the examining board. As, however, no one can practice without a license from this board, it is easily seen that the board has no difficulty in enforcing its act, by refusing to grant licenses to Jewish physicians in excess of the stipulated number.

Russian Students Pardoned. — The Russian Minister of Public Instruction has issued a proclamation by order of the Czar to the effect that all students who took part in the University student disturbances last year are pardoned excepting only those who for special offenses or reasons are entirely excluded from attendance at the superior schools. Most of the students return to work toward the end of this month, some, however, not until August, 1900.

An Expensive Criminal Family.—Ada Zurke, who was born in Germany in 1740 and died in 1800, was a confirmed drunkard. Professor Pellmann, of the University of Bonn, discovered and identified 709 of her descendents. Seven of these were convicted of assassination and 76 others of different crimes, while 144 were professional beggars, 61 lived on public charity, and 181 were prostitutes. Altogether, the cost to the German government of watching, pursuing, trying, and boarding the members of this family, has been more than a million and a quarter of dollars.

Prizes for Work on Malaria. — The Committee of the Société des Etudes Coloniales of Brussels, Belgium has offered two prizes for successful investigations in malaria, each of the value of 2500 francs—$500. The first is to be awarded to any one who shall considerably advance our knowledge of Laveran's hematozoon malariæ in its cycle of existence, either within or outside of the human body. The second is to be conferred on any one who shall determine the exact etiology of the so-called malarial hemoglobinuria, the *fievre biliare hæmoglobinurique* of the French.

Koplik, or Flindt or Flindt-Koplik?—It now appears, according to a writer in the *Weiner Medicinische Wochenschrift*, that the early mucous eruption occurring in measles, the lesions of which have now become generally known as "Koplik spots," was described by a Danish physician named Flindt in 1880. The description corresponds so closely to that given by Koplik that there is absolutely no doubt that the eruption is the same. Will these spots be known to posterity as Koplik spots or Flindt spots or Flindt-Koplik spots; or will they again be forgotten and rediscovered, by some other observer?

Vicious Tubercular Patients.—An Italian correspondent of *Temps* mentions some murderous attacks upon nurses and doctors by tubercular patients in the hospital Santo Spirito. In one instance, in which a Sister of Charity was assassinated, public opinion inclined to the view that the patient was justly enraged on account of inhuman treatment; but in another instance a man who desired to be admitted, killed the examining physician because he was refused, so that the treatment in the hospital does not wholly explain these outbreaks of anger, which are the more remarkable as occurring in patients whose resignation and optimism are proverbial.

Professor Pflueger's Seventieth Birthday.—Professor E. Pflüger celebrated his seventieth birthday toward the end of July. He is the well-known Professor of Pathology at the University of Bonn in the German Rhineland and the editor of the widely read *Archiv für Physiologie* which is usually known as "Pflüger's Archiv." He is still hale and hearty and is doing excellent original work and directing others in his laboratory at the University. He is not, however, a great exception in this respect among distinguished professors at German universities since there are quite a number of septuagenarians still in active work and some few of more than three score and fifteen who have not as yet put off the professorial harness.

Professor Sanarelli's Reported Visit to America.—A recent number of *Science* published the announcement of a prospective visit of Professor Sanarelli of Bologna, Italy, to this country, in order to study the effects of his serum in the treatment of yellow fever. Other American journals have also published the item. As we have been in communication with Professor Sanarelli very recently we think we are in a position to correct this statement. Toward the end of July he wrote from Bologna that he was about to leave the city for a three- or four-months' vacation and that his address in the meantime would be Pratovecchio Arezzo. This for those who may care to communicate with him during the next few months on any of the important questions connected with his yellow-fever discoveries. Professor Sanarelli is very much interested in American medicine, and as his article in the MEDICAL NEWS last week showed, has been following our medical literature very carefully, but he has no present intention of paying us a visit.

Tropical Researches in Malaria.—The expedition sent

out by the Liverpool School of Tropical Diseases under the command of Surgeon-Major Ross for the investigation of malaria in South Africa sailed on July 29th. The English Colonial Office took the greatest interest in the matter and offered to help by every means in its power. The authorities at Sierra Leone have been instructed to furnish ever facility for the successful carrying out of the work of the expedition. Among other things the British Museum directors were asked to send their dipterologist, Mr. E. E. Austin, with the expedition, the Colonial Office offering to pay his expenses. The definite discovery of the exact species of mosquito that carries the plasmodium malariæ is considered of primary importance for the questions of prophylaxis and eradication of the disease that are now so prominently matters of consideration. The Belgian Government, interested in the matter because of its possessions on the Congo, has sent an officially nominated delegate, Dr. S. Van Neck, to visit and report on the Liverpool School of Tropical Diseases and to accompany the expedition.

Belgian Work in Tropical Diseases.—The sum of 50,000 francs ($10,000) was recently contributed to the colonial department of the Belgian government for the purpose of furthering investigation in "colonial pathology." A committee of the Société d'Etudes Coloniales at Brussels was appointed to consider the best manner of making use of the gift, the generous donor of which wishes to remain anonymous. It was finally decided to employ the fund thus created for the equipment and support of a scientific expedition to be sent to the Belgian possessions on the Congo in South Africa, for the purpose of studying the diseases of tropical climates in that region. Dr. Van Campenhout, a medical officer of the Belgian army, who had been twice on duty in the Congo region before, was selected as the head of the expedition and with him was associated Dr. Redding. After a great deal of preparation they set out at the beginning of last month. The Belgian government in South Africa (the Congo State) has established at Leopoldsville a well-equipped physiological and bacteriological laboratory in which the work of the expedition is to be carried out. We have noted above that a medical representative of the Belgian government accompanied the English medical expedition to Sierra Leone which set out only a month later, so that the deep interest in Belgium in tropical diseases and in making the Congo region more habitable for Europeans is evident.

Next Annual Meeting of German Naturalists and Physicians.—This year's meeting of this association is announced for the week of September 17th to 23rd at Munich, Bavaria. German physicians have been complaining for some years of the yearly increase of the number of sections and the consequent division of the work so that a satisfactory glance at medical and scientific progress during the annual sessions is more and more impossible but so far their complaints have been to no purpose. This year there are to be no fewer than 37 sessions, 17 in the natural sciences, 20 in medicine. Two general sessions are held at each annual meeting. This year three addresses are to be given at each of them. At the first general session Dr. Fritzjof Nansen, the famous Polar explorer, will lecture on "The Results of My Expedition to the North Polar Region"; Professor Ernst Von Bergmann, Professor of Surgery at the University of Berlin, will talk on "Radiography in the Treatment of Surgical Diseases," and Professor Foster will lecture on "The Change in the Astronomical View of the World During a Century." At the second general session Professor Birch Hirshfield, Director of the Pathological Laboratory at the University of Leipsic, will deliver an address on "Science and Medicine"; Professor Boltzman will discuss "The Recent Development of the Methods of Theoretical Physics" and Professor George Klemperer of Berlin will lecture on "Justus Von Liebig and Medicine."

International Conference for the Prophylaxis of Syphilis and Venereal Diseases.—At the meetings of the conference to be held in Brussels, September 4, 1899, and the following days, besides the prophylaxis of venereal disease, the question of methods for the control and regulation of prostitution is to be discussed. Papers are to be read by Drs. Fournier of Paris, Neisser of Breslau, Lassar of Berlin, Finger of Vienna, and by a number of others prominent as students of these questions. The committee has appointed the following physicians as delegates to investigate the conditions of prostitution in their respective countries: Argentine Republic, Dr. Baldomero-Sommer, Buenos Ayres; Austria, Dr. Finger, Vienna; Drs. Bayet and J. Verhoogen, Brussels; Bosnia, Dr. Gluck, Savajevo; Chili, Dr. Valdes-Morel, Santiago; Denmark, Dr. Ehlers, Copenhagen; England, Dr. Geo. Ogilvie and Dr. Drysdale, London; France, Drs. Ozenne and Julien, Paris; Germany, Drs. Blaschko, Berlin, and Neisser, Breslau; Hungary, Dr. Rona, Budapest; Holland, Dr. Selhorst, The Hague; Italy, Dr. Tommasoli, Palermo, and Dr. Bertavelli, Milan; Norway, Dr. Axel-Holst, Christiania; Roumania, Dr. Petrini de Galatz, Bucharest; Russia, Dr. Petersen, St. Petersburg; Sweden, Dr. Welander, Stockholm; Switzerland, Drs. Jodassohn and Schmidt, Berne; Turkey, Drs. Von Duhring and Zotos, Constantinople; United States, Dr. Isadore Dyer, New Orleans. Dr. Dyer, the delegate from the United States asks that any data bearing on the subjects to be discussed at the conference be sent either to Dr. Dubois Havenith, Secretary-General of the Conference (15 Rue du Gouvernment Provisoire, Brussels, Belgium) or to himself (at 124 Baronne street, New Orleans, La.). Dr. Dyer has already sent to the health boards of all cities in the United States containing more than 20,000 inhabitants a list of questions the answers to which will supply useful information for the purposes of the conference, as to the state of affairs at present existing in this country in the matter of prostitution and venereal diseases. A copy of these questions, which are very pertinent and suggestive, will be sent on request to any one who is interested in the subjects to be discussed at the conference and who thinks he can supply useful and pertinent information.

MEDICAL MATTERS IN NEW YORK.

SMALLPOX ON A LINER—HORGAN AND SLATTERY, ARCHITECTS—MAN WITH TWO HEARTS—MANY STREET-CAR ACCIDENTS—VETERINARY COLLEGES UNITE—VIOLENT DEATH OF INSANE PATIENT—CHRISTIAN SCIENCE AND THE CORONER.

THE Red-Star Line steamship "Kensington" arrived on August 8th from Antwerp, having on board a boy twelve years old, a steerage passenger who had been stricken with smallpox on July 29th, and was immediately isolated in the ship's hospital. No other cases were found, but the ship was detained until the possible exposure of the passengers and crew could be determined.

We learn that Messrs. Horgan and Slattery, "the official architects" of this municipality, have filed plans for a new two-story building on the north side of Sixteenth street, east of Avenue C, to be used as an office building by the administrative staff of the Willard Parker Hospital. The building is to cost $16,000. Mr. Horgan, at the Mazet investigation a few days ago, announced himself to be "the equal of any architect living," and Mr. Slattery, when questioned concerning his qualifications, said that he "didn't know nothing about such things. You'll have to ask my partner." We may, then, expect a creation eclipsing the poems which Phidias shaped in stone. But we had better not be too sanguine, for Mr. Horgan's most brilliant successes have been in the construction of mud-scows.

There are members of the lay press who have about as much knowledge of anatomy as a Christian-Scientist has. It is related that "a man who has two hearts" called on a Brooklyn physician, Dr. John H. Lawrence of 347 Jay street, who examined both sides of his chest and found a heart on each side. Then the patient, "by some muscular contraction, pulled one of his hearts down into the lower lateral portion of his pelvic cavity, while he held the other heart in its normal position. Then he reversed the position of the two organs, and the physician in each case plainly felt the thumping of the organs as the blood was pumped through them." Or may we suspect that this newspaper man was indulging a sense of humor?

The report that the State Railroad Commissioners propose to take some action during the coming winter to prevent the numerous accidents caused by the various trolley lines throughout the State calls attention to the number of street-car fatalities recorded by the Health Board of this city. During the first quarter ending March 30, 1899, there were twenty-eight people killed by this city's elevated and surface roads. During the second quarter there were twenty-two killed by these agencies.

It has been decided to consolidate with the New York University the New York College of Veterinary Surgeons, chartered in 1857, and the American Veterinary College, established in 1875, these being the only institutions for teaching veterinary science in this city. All the members of both faculties resigned, and a new faculty was appointed, principally from among their number, with Professor Alexander F. Liantard of the American Veterinary College as dean. Among the Faculty are Professors John A. Mandel and Edward K. Dunham, and Dr. William H. Park, all of the New York University and Bellevue Hospital Medical College. The consolidation was made in obedience to the principle now generally accepted in America that each degree-giving professional school should be part of a university. The new school will open its first term October 2d at the college building, 141 West Fifty-fourth street.

Coroner's Physician Hamilton Williams made an autopsy on the body of James McGuire, a paretic who died in the Manhattan State Hospital on Ward's Island on August 5th, the result of which led to the commitment of Keepers Sexton, Ryan, and O'Donnell in the Tombs pending the inquest. Keeper Whyte was sent to the House of Detention as a witness. Dr. Williams found scarcely a spot on the man's body free from contusions. Six ribs were broken. "The kidneys and liver had been badly bruised." There was a large egg-shaped bruise upon the back of the head. The intestines were torn and bruised, the peritoneum was torn almost to shreds and there were about three pints of blood in the abdominal cavity.

The New York State Lunacy Commission will consider the case of McGuire. It has received a report from First Assistant Physician Rowe of the Manhattan State Hospital, in which it is stated that as the patients were about to go out for exercise McGuire suddenly turned upon Attendant Ryan and struck him in the neck with his fist. "Two other attendants came to the assistance of the first and endeavored to control the patient, but being a powerful man, they were obliged to place him upon the floor, two bearing down upon his arms and chest, the third holding his feet. After his paroxysm he was allowed to get up and go into the wash-room. Returning to the ward he sat down, but the attendant, noticing he was very pale, sent for the ward physician, who administered stimulants, but the patient died in a few minutes." McGuire suffered from general paresis. He was of very powerful physique and boasted of his strength as a wrestler and as a "strong man." It is well known that the bones of the insane are more easily fractured than those of other people.

John A. Campbell, sixty-four years old, a teacher of the doctrine of Christian Science, died August 11th at his home, 118 East Ninety-second street. He had suffered a stroke of apoplexy several days before and was attended by two so-called Christian-Science "healers." The evening previous to his death Dr. J. S. Sobel of 1421 Lexington Avenue was called in, but the "healers" would not consent to his treating the patient. Dr. Sobel then notified the Board of Health. Detectives, on going to the house, were shown a death-certificate signed by Dr. Jennie E. Gore of 1145 Park Avenue, on which the cause of death was stated to be "cardiac paralysis induced by apoplexy." Dr. Gore had been called in at 11 A.M., four hours before the man's death. She said she had given a death-certificate in the belief that as another doctor had preceded her it was all right to do so. The law requires that the physician granting a certificate of death shall have been attending the patient for twenty-four hours prior to the person's death; otherwise the case

must be put into the hands of the coroner. Coroner's Physician Weston made an autopsy on the body of Campbell on August 12th. Cerebral hemorrhages and pleurisy were found. Coroner Fitzpatrick will make an investigation.

No reflection upon Dr. Gore is intended in the following extract from the report of the investigation concerning Christian Science made for the MEDICAL NEWS (*vide*, p. 170, January 21, 1899. "The following observation will tend to illustrate the inherent dishonesty of this movement: One of these 'healers' complained to me of the disadvantage at which Christian Science is placed in these times. Should one of their patients die the case must become a coroner's case and be subject to his investigation. A Christian-Scientist's certificate of death would not be accepted. Therefore, should they get into any trouble of this sort, they have to seek (and it is declared they sometimes find) an obliging physician who will get them out of their trouble by signing a certificate for them."

Coroner Fitzpatrick is an honest and a just man; and the combative temperament of the Celt is well developed in him. And if his political superiors will not interfere with his work we may expect from him a vigorous investigation of this case.

CORRESPONDENCE.

YELLOW FEVER AT HAMPTON, VA.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—The yellow-fever epidemic may safely be considered as under control, if not ended. There are no cases outside the Soldier's Home, to which place there will be no trouble in confining the disease. On the advice of the surgeons of the Marine Hospital Service (the officers of the State Board of Health approving) the Board of Health of this town decided on August 10th to raise its quarantine against Hampton, Norfolk, and Warwick County, the Soldier's Home and Phœbus, however, remaining strictly guarded with a double cordon. It looks now as if the quarantine against Phœbus will be raised to-day, there having been no case there for fourteen days. As a matter of fact, it is the opinion of Dr. Wasdin that but one of the three cases reported at Phœbus was true yellow fever. The second so-called case was not seen until convalescence had begun and he preferred as a matter of precaution to look upon it as a case of yellow fever and treated the patient accordingly.

Norfolk raised its quarantine against this part of the world on August 12th, and so ends, I think, what threatened to be a most serious outbreak of this dread disease. This surprisingly rapid eradication is the result of the magnificent work of Dr. White and the officers of the Marine Hospital Service associated with him. Now that it is over, the wiseacres, though many of them fled like sheep at the first report, are giving it as their opinion that because the fever did not spread it could not have been yellow fever, but as Surgeon-General Wyman remarked, if the Marine Hospital Service prevents an epidemic from spreading the Government is blamed for putting the people to the manifold inconveniences of quarantine but these people are only too ready to pillory the Service if the disease is allowed to get beyond control. It is only fair to the people of this district, however, to say that as a rule they behaved with the utmost common sense, and have given the officers of the Marine Hospital Service every consideration and help. It is pleasant to record, amid the utter indifference of the country toward the Marine Hospital Service and its surgeons, that the citizens of Hampton are about to present Dr. White with a handsome chronometer in recognition of his services in this crisis.

The indifference toward the Marine Hospital Service, strange as it may seem, is shared in almost as great a degree by the medical profession as the laity. They have but little idea of the splendid efficiency of the service under Dr. Wyman, and of the intelligent devotion of the surgeons to their duties. In the present epidemic, for instance, scarcely an hour had passed before the patients had been segregated and the infected localities placed under guard. A house-to-house inspection was immediately begun, not only in Phœbus, but in Hampton, Newport News, and in the entire neutral zone, extending from Newport News some thirty miles up the railroad. The writer was ordered to inspect Warwick and part of York County and drove upward of one hundred and twenty miles through the small towns and county districts inspecting houses and running down reports. No one who has not been in a yellow-fever district can have any idea of the false reports which get abroad, of cases here and there, and the terror which is spread by such statements; and it is plain that one of the chief duties of the Marine Hospital Service is to run down such stories and investigate cases of reported sickness.

Speaking of the terror which the mere mention of yellow fever causes, it seems to me it would be a good idea for the Government to print a pamphlet that could be understood by the laity, for distribution among the people, which should show the efficient way in which the epidemics since 1879 have been controlled, and the low death-rate from the disease. They should be made to know that yellow fever does not necessarily mean black vomit, for unquestionably this is their impression.

Speaking generally, I do not suppose that any one will deny that there should be a national control of all matters quarantine. As matters stand to-day the local boards are prone to give much consideration to the purely commercial side of the matter. Norfolk, for instance, quarantined against Newport News without any good reason for doing so, and Newport News naturally retaliated, and this brought about great loss to both places and considerable private deprivation. I am afraid that it is a great temptation for local boards to use their power in such cases for the pecuniary good of their towns without consideration of the intrinsic necessity of such rigorous procedure. The Marine Hospital Service as a national institution should have the power of deciding the question of quarantine in all instances.

FRANK DONALDSON, M.D.

NEWPORT NEWS, VA., August 15, 1899.

OUR FOREIGN LETTER.

(From Our Special Correspondent.)

THE SIXTY-SEVENTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION AT PORTSMOUTH.

PORTSMOUTH, ENG., August 2, 1899.

THE opening sessions of the sixty-seventh annual meeting of the British Medical Association at Portsmouth yesterday were only fairly well attended, the unusually hot weather working upon the British horror of being warm to keep many at home. The natives of The Island do not consider themselves healthy except when just on the verge of goose-flesh, save as a result of exercise and shiver themselves into rheumatism and bronchitis through the entire winter in their unwarmed houses, sustained by the sense of living up to their ideals of hygienic duty. The one thing they dread is being comfortably warm, which is "dangerous" according to their Puritanic health-creed, probably just because it is enjoyable.

Of course the actual business of the meeting does not begin until to-day and the tide of attendance was setting in strong last night and this morning but I fear the 1800 visitors anticipated by the local committee will hardly materialize unless a Polar change in the weather comes to-day, of which there could hardly be less prospect than at present. Another thing that makes the Englishman dread hot weather in town is his abject slavery in the matter of dress. The black coat and the silk hat are as *de rigeur* in any public place, except at a cricket-match or a race meeting, as the breech-clout in Timbuctoo, or rather more so, indeed. Few self-respecting Britishers would dare to appear without either, and ye English medical man is nothing if not proper, wearing his dress suit on every possible occasion, even to meetings of local medical societies.

It always strikes an American pagan curiously that the first morning of a medical association should be devoted to solemn religious opening services, in cathedrals wherever possible, with the added horrors of a long sermon by a solemn ecclesiastic, who probably for the first time in his life has a chance to tell a group of "*tres medici duo athieste*," as the old medical proverb ran, what he thinks of them from his pulpit without fear of reply. The usual burden of his song is how honored the profession ought to feel by the wonderful opening that it has for promoting the true, highest, *spiritual* welfare of humanity, by upholding the hands of God's only chosen professional servant—himself! Strange that our profession does not seem more sensible of the honor.

The chief subjects before the General Session in the afternoon were the Commissions' evil, the Midwife's bill, and direct representation of practitioners in the Medical Council. This last, under the leadership of that experienced warrior against ancient abuses, Mr. Victor Horsley, to whom the profession is already indebted for so many reforms, stirred up quite a hornet's nest, but progress was made, though after the native fashion, with much grumbling. Upon the Secret Commissions' question the council reported that they had heard allegations as to the acceptance of commissions by medical men from druggists, instrument-makers, and *even undertakers* [laughter] but upon investigating these rumors they had come to the comfortable conclusion that most of them were unfounded. Such as had any basis in fact referred to presents after and not to offers before, especially we trust in the case of undertakers. The failure of the Council bill for the registration of midwives was brought up by Dr. George Brown and the alleged bill for this purpose, now before Parliament, drawn up by the midwives themselves, was denounced as "the worst that could be imagined," which the Association endorsed by passing a strong resolution condemning it.

The Parliamentary Committee was thanked for its successful exertions on behalf of Dr. Lamont, the shamefully imprisoned vaccination officer of South Uist and a vote of condolence with the gentleman himself passed.

Dr. Ward Cousins delivered his President's Address in the evening, an interesting and most practical one. He could not, of course, resist the temptation of the classic *piece de resistance* on such occasions, a sketch of the progress of medicine during the present century, but this though so deadly familiar was well done and he soon got cleverly away from it. The "growing influence of the new methods of reseach" and "the decline of abstract reasoning and theoretical speculation" was rightly commended but not without a shrewd hint that it *might* be possible to keep our thumbs so busy that our brains have no time to work out their results, and that the highest function of the medical investigator is *not* to turn himself into a mere Babbage calculator, for registering mathematical results and turning out machine-made "averages" therefrom.

The Conscience clause was condemned as a backward step and the huge pile of "smallpox fuel" which is steadily heaping up under it, in readiness for another epidemic, was noted with apprehension.

Dr. Cousins also called attention in a timely way to the fact that the greater part of drug-taking is done by the people themselves, without the sanction of a physician, and prophesied a marked decline in the amounts of medicine used as the laity—and he might have added, to be perfectly fair, the profession—became more intelligent. He hoped ere long to see every alleged specific protected by the Government stamp compelled to display upon its label an exact formula of its contents; falsification of which, if proved by analysis, would annul the patent.

The Association is about to be asked to take a hand in the fight of the members of the College of Surgeons for representation upon its Council, notice having been given of a motion to that effect. It seems hardly likely that this body, however, will consider the matter within its province.

AUGUST 3D.

Our forebodings based upon yesterday's small enrolment have been fulfiled and the Sections this morning are thinly attended, such members even as have come seeming more immediately interested in the excursions and entertainments, and no wonder in this scorching heat in a land where they don't know the A B C of how to keep themselves cool. No ice within miles and the

starchiest and stupidest of drinks—nothing with a gleam of cooling inspiration in it!

No badges are worn at these meetings, which is a pity as they form pleasant souvenirs of the place. Not that they are in the least needed, for the fine, professional air of the "M. R. C. S. L. R. C. P." can be recognized across the street. The gathering fairly glows with refulgent respectability and the suavely judicial manner of the consultation-room surrounds even each separate individual member as with a halo.

The Local Committee has been most generous of its labor in arranging a perfect swarm of excursions to the Isle of Wight, Winchester, Salisbury, and a score of places of interest in the neighborhood.

The general meetings are held in the Great Hall of the imposing Town Hall, hung round with the banners of the Sea Kings, Nelson, Anson, Collingwood, Drake, whose very names bring the blood to even an American cheek, heroes as they are of our common race.

The sections are held in the committee rooms of the Town Hall and in various rooms in the neighborhood, very convenient of access but a little incongruous at times in sound at least. The Pathological, for instance, is held in an infant school in the delicately appropriate region of "Salem Street" but how much better the Section on Pediatrics or even Obstetrics would have fitted there. The Section on State Medicine is held in a gas company's office, where it is to be hoped their discussions will not make the meters register any faster than they do at present.

The Drug and Appliances' Exhibit, which we frankly label as the advertising display, is here dignified by the title of "Annual Museum" and a huge catalogue of the exhibits is printed by the Association.

SCIENTIFIC MEDICAL JOTTINGS FROM AMERICAN TROPICAL COUNTRIES.

HOG-CHOLERA IN BRAZIL.

THE declaration of Drs. Reed and Carroll of the Army Medical Department at Washington that Sanarelli's supposed bacillus of yellow fever is really the bacillus choleræ suis gives special medical interest to the existence of that disease in countries like Brazil, where yellow fever is endemic, and in South-American countries generally. In the *Revista Medica de S. Paulo*, Brazil (a Portugese medical monthly), for June 15, 1899, Dr. Bonilha de Toledo reports the conclusions of some interesting work in the bacteriology of the disease done at the Bacteriological Institute of the State of St. Paul. .

The investigation puts beyond all doubt the existence of hog cholera in the neighborhood of S. Paulo, and gives some interesting details of the biology of the specific bacillus of the disease. The germ isolated from the hogs can by cultivation in artificial media in pure culture, be made to lose its virulence practically entirely, so that susceptible animals are able to tolerate without inconvenience "relatively enormous" injections of the microbe. Its virulence on the other hand can be enormously increased by passage through such animals as the rabbit and the guinea-pig. Hog cholera, as observed in Brazil, is the same disease as has been described by French writers under the name of pneumo-enterite. [Professor Sanarelli seems to have demonstrated in last week's MEDICAL NEWS that it is a laboratory error that has led the American investigators to declare that the bacillus choleræ suis and his bacillus icteroides are the same micro-organism.]

CAUSE OF YELLOW FEVER AT MONTEREY, MEXICO.

The result of the investigation of the origin of the yellow-fever epidemic of last year at Monterey was announced in the *Boletino del Cons. Sup. de Salubridad*, Mexico, No. 6, 1899. The infection came from the port of Tampico where yellow fever is proclaimed to be endemic, and was carried by way of the railroad. The commission thinks it has demonstrated that merchandise and freight of various kinds as well as sick human beings can carry the contagion.

With regard to the pathology of yellow fever two lesions especially are insisted on that have not heretofore been given a sufficiently prominent place in the morbid anatomy of the disease. In many cases there exists an exquisite fragmentation of the myocardium and in nearly all an intense fatty degeneration of the kidneys. The microscope shows large zones of renal steatosis in the midst of which there is complete destruction of the uriniferous tubules, in fact the secreting substance and all the essential parts of the kidney proper are reduced to a disorganized mass of fatty material.

In the bacteriology of the disease the commission finds a great liability to secondary infections. This has, of course, been already very much insisted on by Sanarelli himself. They found the bacillus icteroides with the biologic and morphologic characters indicated by Sanarelli, and besides this micro-organism practically always ordinary forms of staphylococcus, streptococcus, the colon bacillus, and proteus, etc., which must be considered as nearly always playing an etiologic rôle in the production of certain of the symptoms of yellow fever.

THE BACILLUS OF YELLOW FEVER AND MOLDS.

Last year Dr. de Lacerda pointed out, as we reported at the time in the MEDICAL NEWS, that a very remarkable symbiosis existed between certain molds and the bacillus icteroides. He saw in this symbiosis the probable reason why yellow fever infects especially the sea coast, and generally damp localities as on shipboard, for it is in such places that molds grow most luxuriantly. Further study has confirmed his original conclusions (*Brasil Medico*, No. 20, Rio de Janeiro, 1899). Not every kind of mold favors the growth of the bacillus icteroides, however, but especially a brownish form of aspergillus. Dr. de Lacerda has found in a tube of agar originally inoculated with bacillus icteroides, but which seemed to remain sterile and which was practically thrown aside in the laboratory, that at the end of a year, examined by chance, there was found a rich growth of this special brown form of aspergillus. In the meshes of the mold were forms of bacillus which proved on further investigation to have all the morphological and biological characteristics of the bacillus icteroides.

It is assumed that the gelatinous mass formed by the aspergillus makes a habitat for the bacillus icteroides outside the human body. This is interesting as one of the very rare cases of plant parasites acting also as human parasites. Observation in the neighborhood of Rio Janeiro has shown that the most common mold in the summer time is precisely the aspergillus, while in winter only pencillium and mucor are to be found which would give a new reason for the failure of yellow fever to be epidemic during the cold weather. This is not the only interesting biological relation between the two micro-organisms, for further study seems to show that the bacillus icteroides and aspergillus are affected in a very similar manner by meteorological conditions generally.

YELLOW-FEVER DISTRIBUTION THROUGH THE AIR.

Professor Sanarelli, commenting on this work of Dr. de Lacerda (*Clinica Moderna*, No. 26, 1899), says that yellow fever is one of the diseases that seems beyond doubt to be spread through the air and not to require direct contagion. In this symbiosis with molds, a symbiosis that may preserve the bacillus icteroides, as has been shown for long periods of time, there is to be found a ready explanation of one method at least by which it might find its way into the atmosphere and be easily carried about entangled in the feathery meshes of the mold.

IS SANARELLI'S BACILLUS ICTEROIDES A SPECIFIC PATHOGENIC MICRO-ORGANISM?

The conclusions of Dr. London's work on the bacillus icteroides, though done at St. Petersburg and published in the last annual report of the Russian Society for the Care of Public Health, seem to deserve a place in this column. He was asked by Professor Lukianow, the well-known head of the Imperial Institute at St. Petersburg to study a pure culture of the bacillus icteroides. He finds that Sanarelli's bacillus must be considered as a particular species of bacterium endowed with undoubted pathogenic properties for various animals. Microscopic examination of the organs of animals that died after injections of pure cultures showed a state of congestion and a fatty degeneration of the cellular elements. The bacilli were found either isolated or collected in groups sometimes within, sometimes outside of the capillary vessels. London observed the change of form under changes of temperature, which Sanarelli considers so characteristic of his bacillus icteroides.

SOCIETY PROCEEDINGS.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-seventh Annual Meeting, Held at Portsmouth, England, August 1, 2, 3, and 4, 1899.

FIRST GENERAL SESSION.

OWING to the illness of the retiring president, SIR THOMAS GRAINGER STEWART, DR. ROBERT SAUNDBY, president of the Council, took the Chair, and introduced the president-elect, DR. JOHN WARD COUSINS, who was enthusiastically received. He chose as the subject of his address,

THE CENTURY'S PROGRESS IN MEDICINE AND SURGERY.

He reviewed the progress of medical science during the century just closing, saying in part: The great characteristic of the beginning of the century was the growing influence of new methods of research, and the declining power of theoretical speculation and abstract reasoning. The brilliant researches of John Hunter, and the results of his extraordinary industry and patient study had given a great impulse to the study of anatomy and pathology. His teachings are recognized as the foundation of British surgery. Scotland aided in the evolution of the healing art, and the fame of Cullen extended far beyond the British Islands. In 1828 John Abercrombie published his famous work on the diseases of the brain and spinal cord. In Ireland Robert Graves was an eminent clinical teacher and expounder of the phenomena of disease. William Stokes will ever be renowned for his researches and writings on diseases of the heart and chest. In France medical science was roused by the researches of Bichat in anatomy and physiology. Soon after the medical world was startled by the new methods of physical diagnosis introduced by Laennec. In 1840 Bright described the disease of the kidney which is still known by his name; and not long after Bell and Marshall Hall made it possible by their labors to discriminate diseases of the spinal cord.

Let me remind you that the first years of the century were marked by the rapid and complete triumph of vaccination. Jenner's first treatise appeared about 1799 or 1800. In 1802 the question of vaccination as a preventive remedy for smallpox was brought before Parliament. The new method spread rapidly over England, then to Germany, France, Italy, America, and the whole civilized world. It is a well-known fact, however, that this remarkable acceptance of vaccination at this time was due to the efforts of public-spirited men rather than to the members of the medical profession. Many of the doctors of that day considered the practice as medical quackery, and even charged the vaccinators with flying in the face of heaven. Yet at this period smallpox was a frightful scourge. Throughout the Eighteenth Century nearly every human being suffered from the disease, and the mortality was often appalling. Jenner died in 1823, still doing battle with the foes of progress, and in the hour of victory. We can now look back upon the experience of 100 years and accurately estimate the value of his great discovery. Since the introduction of vaccination there has been a steady diminution in the death-rate caused by smallpox. During recent years the disease has been almost exterminated by infant vaccination and revaccination in the later periods of life. Wherever an outbreak has occurred, the unvaccinated are attacked in much greater proportion than the vaccinated; and the mortality among the unprotected is much higher than among those who have submitted to this safe and protective remedy. The recent modification of the vaccination laws is regarded

almost universally as a very unsafe and retrograde change and there is reason to fear that sooner or later there may be another outbreak of the disease. I am confident, however, that the voice of the medical profession will never cease to sound the alarm, and that our great Association will never hesitate to put forth all its influence and strength until the adversaries of sanitary progress have been defeated, and the old enemy slain again at our gates.

During the early years of the century the development of the various industries rapidly caused a migration from the country toward the provincial centers, and for this increase of their inhabitants there was very little accommodation. I need not remind you of the wretched state of the houses of the working population in those days—the narrow courts, the stifling slums, the unwholesome factories, the neglect of cleanliness, and the total absence of any rudiment of sanitation. It is not surprising that, under these conditions, disease, deformity, moral and physical degeneration were the results. The bills of mortality of London at this period sometimes reached 50 to 60 per 1000 living. In 1834 the Legislature commenced action in the sanitary interests of the people. Soon after a national system of registration was introduced, and the causes of death were certified by medical men. Acts of Parliament were also passed to give power to town authorities to provide water-supply and drainage. Pioneers in sanitary reform arose on every side, while fresh revelations of neglect startled the intelligent people, and a loud demand arose for increased legislative control. But there was an outcry from the grasping holders of vested interests, and from the prejudiced of every class of the community, against the growing power of sanitary reform and every earnest effort to cast out preventable disease. The dreadful epidemic of cholera in 1848, and the largely preventable horrors and sufferings of the soldiers in the Crimean War in 1855, were productive of still further beneficial legislation.

The name of Florence Nightingale will ever be associated with the evolution of hospital reformation in this country. She roused not only the civilized world, but also the professors of the healing art, and the loud demand for hospital reform which has been extended through the length and breadth of the land can be fairly traced to the mental power and splendid devotion of Florence Nightingale.

The early part of the century will ever be recognized as the birthtime of modern pathology. The teaching of John Hunter was a long way in advance of his predecessors and he was the first to recognize that all the processes of the organism belonged to biological science. He saw that disease was only a deviation from health and that both conditions were regulated by the same vital laws. The manufacture of the acromatic compound microscope in 1830, made possible the discoveries of Schleiden in vegetable tissues, and those of Schwann in the cellular structure of animal bodies, but we are indebted to Virchow for exhibiting histology as the real instrument for unfolding the deep mysteries of disease. He practically gave the medical world a new pathology founded upon laborious observation and experiment. Every kind of organic structure and every new formation, he announced could be traced to a vital source.

An inquiry into the early history of many branches of science clearly indicates that old speculations concerning obscure phenomena have often in the long run proved to be real anticipations of future progress. About 1840 Watson ascribed the wide diffusion of influenza and other infectious fevers to the presence of minute substances: "Myriads of animalcules may come in contact with the mucous membrane, and exercise a poisonous influence on the system. The gaseous fluid which surrounds this planet teems with living atoms, and these atmospheric infusoria probably congregate in masses sufficient to render noxious the very air." The theory of fermentation enunciated by Professor Liebig tended at this period strongly to confirm the parasitic theory. I cannot pretend to sketch the evolution of this young science, but only to mention that this fresh light has arisen from France, Germany, and England, and that it is mainly due to the brilliant labors of Lister, Pasteur, and Koch. Lord Lister has generously expressed his indebtedness to Pasteur for his original researches; Koch has by his splendid ingenuity made the most important improvements in the bacteriological technic. No doubt they are all indebted to each other, and the world of science will be for ever indebted to them all.

We are greatly indebted to our distinguished member, Sir James Paget, for his brilliant efforts to promote research in comparative pathology. Only a few years ago the real nature of that dreadful scourge of the human race, tuberculosis, was discovered, and its intimate association with the same disorder in domestic animals was clearly brought to light. Tubercle had been examined by the best observers in the civilized world, who, with a remarkable unanimity, pronounced the opinion that it was so indefinite in structure that it could be recognized as much by negative as by positive qualities. But in 1882 the whole pathology underwent a great revolution by the demonstration of the life-history of the tubercle bacillus. The disease, occurring in any tissue or organ, is now universally regarded as a specific disorder, and the bacillus the cause of the morbid changes. The inheritance of constitutional peculiarities, the liability to chronic inflammations, and the susceptibility to external influences are now regarded as conditions which help the microbe to establish itself within the body. Still these factors are not less potent because the specific characters of tuberculosis have been revealed.

In 1894 the bacillus of the plague was found in the blood of a patient. As long ago as 1881 Ogston discovered micro-organisms in acute abscesses, but there are still many unsolved problems around septicemia. Ross and Manson have traced malaria to a parasite which has the power of assuming a latent condition within the human body while it is propagated outside of the human body. I refer to these facts only to show the great impulse bacteriology has given to the study of the intimate connection between the diseases of mankind and the diseases of animals. What may we

expect from this young science in the future? We are only touching the fringe of its possible revelations.

A hundred years ago the physician enjoyed both professionally and socially a far higher position than the surgeon. Medicine was regarded as a science, but the leaders of that day looked down upon operative surgery as a reproach to the healing art. John Hunter spoke of operations as only humiliating examples of the shortcomings of the medical science. It is not surprising that the knife as a remedy was greatly dreaded, and the prospect of an operation caused in many patients great mental depression. The after-treatment, too, was often extremely painful and very roughly carried out.

The idea that some agent might be found to render operations painless appears to have engaged the attention of surgeons from the earliest times. Mechanical means were employed for compressing the blood-vessels and nerves; hypnotic anesthesia was employed by some surgeons, and opium and alcohol were freely administered to relieve the distress of very painful operations, but the results were often very unsatisfactory and dangerous. Sir Humphrey Davy at length published some researches concerning nitrous oxid. Ether had been used in medicine for many years, and it enjoyed a great reputation in chest diseases. Dr. Crawford Long, of Pennsylvania tried the vapor in some minor operations about 1840. Horace Wells, a dentist of Hartford, Connecticut, and William Morton, dentist of Boston, employed ether locally for toothache, and also to relieve the pain of extraction. Subsequently Morton experimented with ether upon animals, afterwards upon some students in his class, and then upon himself. He administered it to his patients at length, and, after many careful and anxious trials with various kinds of inhalers, he privately communicated his experiences to Dr. John Collins Warren, and requested that he might be permitted to administer ether during an operation. This was successfully done, October 16, 1846.

The discovery was carried with great rapidity to all parts of America and to the central cities of Europe. On December 24, 1846, Liston in London performed amputation of the thigh under ether anesthesia with complete success. Sir James Simpson of Edinburgh (then Dr. Simpson) took up the question with great enthusiasm. He considered that ether was not free from objection because of the large quantity required to establish insensibility, and he commenced to investigate the effects of other volatile fluids. He afterward made many successful experiments with chloroform at the University of Edinburgh.

The introduction of surgical anesthesia exercised at once a great influence on the practice of surgery and the number of operations increased in all directions. Unfortunately, the surgical world was quite unprepared for the sudden outburst of enthusiasm which followed the great discovery. At this period surgical instruments were few in number and many ingenious aids to diagnosis now universal were not then in existence. The hospitals were constructed regardless of all sanitary precautions and without any means for securing adequate light and fresh air for the safe treatment of urgent surgical cases and acute diseases. The nursing system, too, was rotten to the core. Under such conditions it is not surprising that suppuration followed almost every wound, and that septic processes were started by every operation. Again and again gangrene, pyemia, and erysipelas ran through the wards of these old buildings, and the medical officers saw clearly that these outbreaks were infective disorders and were carried from one patient to another. The terrible ravages of sepsis helped to bring about better ward ventilation and improved sanitary arrangements in many of the old buildings, and these advances helped to prepare the surgical world for the coming of the great crisis when the doctrines of Lister shook the foundation and revolutionized the practice of surgery. Lord Lister demonstrated to the world the part that living organisms play in the production of septic diseases and then exhibited the simple means by which their growth and development could be prevented. During the last quarter of the century surgeons have carried out the aseptic system in every land and in every clime, and it has given a surprising impulse to successful practice, and has developed into a world-wide blessing.

I shall now conclude my remarks with a brief reference to recent progress and the work of the future. The medical profession was never so earnest in its efforts to prevent disease as it is to-day, and it is really a fortunate thing for the world that our ranks are not getting thinner. On the other hand, the people of this country generally are growing wiser and will trust less to mysterious and puffed-up remedies. I hope the day will come when every vaunted specific protected by a Government stamp will carry a label revealing the exact nature of its composition. Bacteriology has already provided the physician with a new set of remedies; in diphtheria antitoxin has proved of marked utility; the treatment of tetanus, both subcutaneous and intracerebral, appears to have been successful in some cases. As regards tuberculosis, enteric fever, and cholera we must wait the test of experience.

The serum treatment of specific disorders has only reached the initial stage, still it is full of promise. Another step forward is the discovery of the great value of the product obtained from healthy glands in the treatment of certain disorders. The special utility of thyroid-gland substance has been well established and the most marked results have been achieved by its administration. At the same time we really know nothing about the nature of its secretion which appears so essential to the nutrition of the tissues.

The close of the Nineteenth Century will be forever memorable for the great efforts which have been initiated for the prevention and cure of tuberculosis, not only in this country, but in all civilized lands, and we sincerely hope that this united attack upon our deadly and widespread enemy will be followed by enduring benefits to the race. It is a matter of great congratulation that H. R. H. the Prince of Wales is the head of the great national association which has been formed for the purpose of arresting, as far as possible, this dreadful scourge, and

that in all the leading centers men of every class are cordially cooperating in this important movement. The tubercle bacillus does not seem to care for all the physic in the world; but we believe that in a germ-free atmosphere and pure surroundings it may be made to die.

Notwithstanding the great progress of medicine during recent years the results have been less manifest than the brilliant advances of modern surgery. There is no organ or region of the body which has not been investigated by the surgeon. Only three and a half years ago the remarkable discovery of Professor Röntgen was communicated to the scientific world and it has already proved of great value in surgical practice, having revolutionized the old methods of military surgery, and given a fresh impulse to the study of diseases and deformities of the skeleton. Noteworthy advance has been made in the treatment of hernia by the development of the operation for radical cure. Hundreds of thousands have been saved from lifelong deafness by the removal of nasopharyngeal vegetations, thanks to the discoveries of Hans Wilhelm Meyer.

The experimental investigation of the causation of human septic disease is still far from complete. Up to the present time we have no cure for sepsis when it has entered the body; still we have much reason to hope that a remedy will be found, and that the destruction of sepsis-producing organisms within the blood and tissues may be at length accomplished.

The treatment of cancer and its manifold complications is another great field for inquiry in coming years. For some time a growing impression has prevailed that the disease has been steadily on the increase. No doubt during the next few years the question will be settled. Recently some investigations have been published suggesting that the disease is due to a parasite. Local irritation is certainly a great factor in the development of cancer. Other observations have suggested that the disorder is liable to recur in particular places. A curative serum for carcinoma has not yet been discovered. Up to the present time surgical treatment yields the best results, and the earlier it is adopted the better. The pathology and treatment of cancer still bristle with difficulties. It is at least some satisfaction to know that many of the best pathologists and surgeons are diligently laboring in all parts of the world to unfold the mysteries which still surround this terrible disease.

In the coming century a stronger and broader warfare will be carried on against preventable disease. I believe there is every reason to anticipate that the death-rate of the country may still be greatly reduced, and that 10 to 12 per 1000 may be the figures of the coming century. The great hindrance to the progress of preventive medicine which we have to overcome is the overcrowded and unsanitary condition of the dwellings of the working classes. This is the field on which the great battle with infectious disorders will have to be fought out. Our warfare will not be directly with microbic life, but rather with the conditions in which specific organisms are grown. We want to see more progress in getting rid of the crowded and dirty courts in every city. These denlike homes are the arch enemies of sanitary progress in all our great centers. But the battle against disease and death will only end in disappointment unless we have something more than the force of legislation and the unceasing watchfulness of a complete sanitary system. If we had the power of transforming the dwelling-houses throughout the land, and of establishing everywhere a perfect system of drainage, and of securing for all an abundant supply of pure water, we would accomplish but little without the help of the people themselves. Depend upon it, the basis of national health is the personal cultivation of health. We want the fathers of England to be the enlightened sanitary officers of their own household. We desire to see a wider knowledge of the laws of health and I hope the day is not far distant when they will be zealously taught in every school in the kingdom. The working classes have to learn that rest is essential to overcome the strain of daily labor, and that personal cleanliness, temperance, and domestic sanitation lead the way to higher blessings. The weekly rest when rightly used gives another impulse to sanitary progress. It promotes purification of the body and cleansing of the dwelling. What washings and scourings, what polishings and decorations herald its near approach! What an army of buckets and brushes and dust-disturbers are called out at its coming; what floods of clean water are made to remove the accumulations of the week! Yes; the weekly rest falls like the reviving dew on the hot brow of industry; it stops the wheels of labor; it soothes the brain, give rest to hands, and calls forth the highest aspirations of human nature.

SECOND GENERAL SESSION.

At the General Session on Wednesday, August 2d, it was decided to hold the next annual meeting of the Association at Ipswich. Dr. W. A. ELLISTON of that city was chosen president-elect.

ADDRESS IN MEDICINE

was delivered by SIR RICHARD D. POWELL.

He said in substance: Thinking over the best way in which to fulfil the task which I am honored to perform to-day, it occurred to me that it might be interesting to listen to a few remarks suggestive of the trend of medical opinion to-day.

We are certainly better equipped for exact diagnosis now than ever before, and possess a larger and a more precise knowledge of a greater number of diseases. The flexible stethoscope which has come almost exclusively into use within the last twenty years intensifies sound but practically obscures impulses. Thus the sense of touch in auscultation is, if I may use the phrase, in a certain degree becoming lost to us. I have known the diagnosis of an aneurism missed in this way.

Happily we already see a revival of the appreciation of the pulse in practical medicine; and the clinical habit of listening to the heart, not only with the view of hearing morbid sounds, but to estimate work value, is also of recent acquirement. The clinical thermometer is as important in bedside medicine to-day as the barometer and compass combined are in navigation, and where we are

sometimes led astray by pyrexial charts it is not the thermometer that is at fault but our insight that is imperfect. Not long ago the temperature mistaken for the disease was pursued round the dial by antipyretic medication and measures taken to the spoiling of the chart, the detriment of the patient, and the disappointment of the doctor. A better knowledge of the habits and vital history of the micro-organisms upon whose doings pyrexial phenomena so largely depend, informs us that their initial attack and greatest activity is at the lower ranges of temperature, and that the higher ranges, the results of such activity, are more or less inhibitive to their well-being. Thus we have often observed a pneumonia or an influenza treated too vigorously with pure antipyretics pursue an abnormally stormy and adynamic course.

The clinical study of anomalous fevers has gradually convinced us that in their development and full activity specific poisons may overlap one another in the same illness; thus the typical *crescendo* temperature of the early period of an enteric fever may be masked by the fluctuating pyrexia due to the toxin of an associated sepsis. A rational treatment of specific diseases must be guided by the recognition of these superfactors. The rational and most successful treatment of tuberculosis is for the most part unwittingly directed to attendant phenomena which are secondary, and which for brevity's sake we call septic. Our antiseptic treatment and our pure-air methods are mainly operative against such secondary infections. In the diagnosis of fevers we have auxiliary tests of modern design—some purely chemical, such as Ehrlich's, others furnished by examination with bacterial reagents, such as Widal's test in enteric fever, which are of considerable value in anomalous cases.

It must be confessed that bacteriology in its application to diagnosis and treatment in practical medicine is yet in its infancy; but it is a very robust infancy, full of promise. Bacteriology in all its departments is, and must ever remain, subject to expert investigation. It is impossible for the busy practitioner to find the time or to maintain the technical skill and apparatus necessary for trustworthy investigation, and it is to be hoped that the time will soon come when in every district throughout the country there will be in connection with the Public Health Department a bacteriological laboratory, where the ordinary, and even the extraordinary, clinical tests will be at the command of every practitioner at a moderate scale of fees.

It is a matter of congratulation to see the departments of research and clinical observation approaching to closer communion in our great hospitals, a cooperation which cannot but be to the great advantage of the physicians, and I venture to think scarcely less so to the research expert. We are thus acquiring daily a more accurate knowledge of organized poisons and we are interpreting better the phenomena they produce.

It has long been clear to every observant physician that we carry about with us in our accessible mucous tracts and especially in our naso-oral and respiratory passages, samples of the organisms specific to many diseases. We are tenanted by these varied organisms in small colonies or singly, rendered inert only through want of opportunity. Let a period of depression come over us, involving some slight change in our blood or tissue, and one or other of these organisms may receive the opportunity for aggressive cultivation. We virtually know that this is so in the case of a common cold whose bacteriology no one, so far as I am aware, has yet condescended to work out. Yet it is the type of a large number of more important diseases, and carefully investigated it would, I believe, be fruitful in side-lights upon their etiology and prophylactic treatment. There are many people of somewhat feeble vitality whose complaint is that they are constantly catching colds. Such attacks are due probably to the cultivation of successive crops of an ever-present organism. We have little power in attacking the organism; we might as well do battle with a sunbeam. Our treatment is to fortify the host.

I will only discuss the question of serum-therapeutics from the side of results achieved in the form of additions made to our therapeutics. It is already an immense achievement if we have acquired the knowledge that every infection requires a separately prepared serum for its treatment. It explains many of our failures and gives promise of adding to our successes. It has for some time been recognized that infective endocarditis has a manifold microbic pathology—streptococcus, staphylococcus, pneumococcus, gonococcus, are some of the organisms concerned. It is useless to employ an anti-streptococcus serum for a pneumococcus infection, and even the two organisms, streptococcus and staphylococcus, which seem to work most cordially in couples, require a separate treatment. We must push our diagnosis further to include a recognition of the precise organism or organisms which have obtained lodgment in any given case. We are indeed only at the dawn of serum-therapeutics and many mistakes will have to be retrieved, many apparent steps forward retraced, in the sure but slow advance in this new departure of therapeutics. Although Pane's antipneumococcic serum will protect a donkey or a rabbit from the evil consequences of a strong dose of pneumococcus infection, it has not as yet come into practical use in the human disease. I have recently tried it in two cases without result. This may be due to three causes. In the first place it is difficult to use the serum early enough in the disease, and, secondly, the most severe cases in which at present one feels disposed to try the remedy are most generally complicated with some other infection, so that the pneumococcus in the sputum does not signify the sole—perhaps not the most important—element of danger in the case. Thirdly, the doses employed by Pane have been very large, so large that one shrinks from introducing in such bulk an unknown or imperfectly accredited element into any case not already desperate. In all probability the want of success in the antitoxin treatment of erysipelas, puerperal fever, and allied affections, including infective endocarditis, may be accounted for by the presence of more than one organic infection, thus requiring, as pointed out by Behring, Pfeiffer, and Kanthack, more than one antidote.

It seems possible that we may look in the near future for considerable development of preventive serum treat-

ment in the prophylaxis of endemic diseases. Already within the past few months we have seen maturing toward successful action the researches of Haffkine and Wright and others on the means of procuring immunity from typhoid fever and plague. Indeed, the whole question of antitoxin and serum-therapeutics has only within the last five years become of practical interest to the physician, and we may expect every day to bring to light fresh developments.

It may be urged with some justice that we in this country have been behind our Continental friends in grasping the full significance from a prophylactic point of view of the discovery of a definite infective bacillus element in tuberculosis, which was made seventeen years ago and anticipated seventeen years previously. But to set heredity at naught, to regard climatic considerations as of no importance, and to state that the disease is always acquired by direct contagion or infection is, in my opinion, to ignore much that is true, and to magnify that which should be carefully guarded from exaggeration. We cannot, of course, prevent consumptive people from marrying; but the advice of the family physician should be discouraging to such alliances, which are unfortunately often prolific.

But whilst on the one hand advising every ordinary measure of cleanliness, avoidance of dust, and proper disposal and disinfection of sputum, we may, and indeed must, avoid all exaggerated statements calculated to alarm the public as to the contagion of phthisis, the evidence of which, except under the most experimental conditions alluded to, is extremely slender. It is remarkable that two at least of the most deadly of disease microbes, tetanus and anthrax, should be normal inhabitants of the soil, and yet how comparatively scarce these diseases are, and, having arisen, how communicable. It would seem that, as is the case also probably with malaria, whilst the ultimate source of the disease is vegetation in the soil, yet a greater virulence and activity is attained, and for a short time maintained, by cultivation in the human body, or in that of certain other warm-blooded animals. General sanitation and cleanliness is our first line of defense against them all. Wherever the conditions of insanitation, dampness, deficient sunlight, and the prevalence of favoring diseases are present there aggressive activity may be again looked for.

SECTION ON MEDICINE.

FIRST DAY—AUGUST 2D.

The Section on Medicine was opened by the President, DR. J. MITCHELL BRUCE. He confined himself to outlining the program, emphasizing, however, the importance of two topics which were to come before the members for discussion, one being the "Examination of the Men and Boys Who Were Admitted into the Services," and the other the "Preventive and Remedial Treatment of Tuberculosis." The former was peculiarly appropriate for discussion in Portsmouth, and the latter would be full of interest on account of the numerous winter health-resorts in Great Britain, and because of the number of well-qualified speakers who were to take part in the discussion.

In the absence of SIR DYCE DUCKWORTH, the president read his opening contribution to a discussion of the medical tests required at present for admission to the public services. The factors of the eligibility of candidates, both on account of physique and the power to pass examinations, were generally discussed and the causes of the rejection of defective candidates reviewed.

PROFESSOR OSLER, who followed, said that the physical examination of candidates should take place earlier in the course of their training, and alluded to the presence of a cardio-respiratory murmur, a pulmonary systolic murmur, and adolescent albuminuria as more common causes of their unnecessary rejection.

SURGEON-GENERAL MUIR and SURGEON-GENERAL CUFFE spoke of the question from the military side, and on the whole supported the *status quo;* while SURGEON-COLONEL WELCH thought that the most suitable men were not obtained for the army on account of the literary requirements. The President suggested that the following resolutions should be sent up to the Council, requesting that they be submitted to the War Office: "That the physical examination should precede the educational; that soldiers should not serve in the tropics until twenty-two years of age, and that the question of the physical standard required reconsideration." These resolutions were unanimously adopted.

SECTION ON SURGERY.

FIRST DAY—AUGUST 2D.

The Sectional work was opened by the President, MR. H. T. BUTLIN, who outlined the subjects for discussion, calling especial attention to the importance of gunshot wounds in civil life and to the high percentage of soldiers who are disabled from duty on account of venereal disease.

An opening paper on

THE DIAGNOSIS AND TREATMENT OF GUNSHOT WOUNDS OF THE ABDOMEN

was read by COLONEL STEVENSON, Professor of Military Surgery at Netley. Civil practice had been freed from the dread of interference with a serous membrane. Military surgeons had been slower in recognizing the capability of modern surgery in cases of gunshot wound of the abdomen, and for the following reasons: The procedures must be carried out in field-hospitals; the personnel of these hospitals was kept as low as possible; the work done in them was performed at high pressure; wounded men were often left on the field of battle a long time before being picked up, and the military surgeon's mind was influenced by the feeling of the "greatest good to the greatest number." When patients were healed by rest and opium, the cures were probably not more than 1 per cent. of those diagnosed. When a bullet traversed the abdomen it might be assumed that either extravasation of intestinal contents or hemorrhage, or both, had occurred.

A fatal issue was certain in either. The indication was quite distinct; the abdomen must be opened, the intestines sutured, and the peritoneum cleansed. The symptoms of hemorrhage and of extravasation of intestinal contents were analyzed and discussed. Hemorrhage results from the following injuries, in point of frequency: Rupture of the liver, spleen, kidneys, small intestines, and large intestine. The symptoms of extravasation are misleading, irregular, and inconstant. The onset of sudden meteorism, upon which so much stress had been laid was considered of no value. The absence of liver dulness might be observed when no rupture of intestine had occurred, and liver dulness might be present when there was much free gas in the peritoneal cavity. The results in recent campaigns were mentioned. In the Spanish-American war all patients operated on died. In the Græco-Turkish war 1 case of hemorrhage, and 1 of injury to the liver terminated in recovery, 1 of wound of hollow viscera in death. In the Tirah campaign 5 patients were operated on and all died. The statistics of Morton of Philadelphia were more encouraging. In 234 cases occurring in Europe and America, the mortality was 58.9 per cent. Coley's statistics showed a death-rate of 53.9 per cent. if operation was performed within twelve hours, and 77.3 per cent. if performed after twelve hours. When a wound of the intestine was found it was best treated by (1) simple suture in two layers, one for the mucous membrane and one for the peritoneum; (2) the method of Maunsell; (3) Murphy's button.

DR. WARD COUSINS pointed out that the chances of success depended on early operation as soon as the diagnosis of internal injury had been made out. The diagnosis was not always easy. Perforation with very little extravasation might not cause urgent symptoms; on the other hand, severe contusion of the abdominal wall might be followed by great collapse. Every case must be left to the judgment of the surgeon. When operation is performed it is best to enlarge the wound of entrance and to use as retractors stitches passed through the edge of the wound and held by assistants. The methods of treatment he preferred were simple suture by fine silk and the Murphy button.

MAJOR W. C. BEEVOR quoted the experience of Colonel Whitehead and himself in the Tirah campaign. The number of the wounded was very large; all water within access was contaminated by the urine and feces of men and animals. He quoted cases showing the enormous difficulties in the way of carrying out adequate treatment. He drew attention to the enormous advantage obtained in the treatment of collapse, by the preliminary irrigation of the peritoneal cavity.

SURGEON-GENERAL O'DWYER expressed the belief that operation on the field of battle was impracticable. Unless patients could be dealt with as in civil life it is better not to operate.

In reply COLONEL STEVENSON regretted that in the Tirah campaign the conditions did not approximate to those existing in civil life, but felt sure that with the new equipment the measures suggested as being necessary for the adequate treatment could be efficiently carried out.

SECTION ON OBSTETRICS AND GYNECOLOGY.

FIRST DAY—AUGUST 2D.

The President, DR. G. GRANVILLE BANTOCK, made a plea for conservative work. He said that he had viewed with much concern a growing tendency to resort too quickly to the knife; in other words, a *cacœthes operandi*. There should be greater reliance upon measures of a more simple and conservative character. He mentioned several instances that showed the bad results of too hasty operation.

The discussion was opened by DR. HERBERT SPENCER, who read a paper on

THE TREATMENT OF FEVER FOLLOWING DELIVERY, WITH SPECIAL REFERENCE TO SERUM-THERAPY.

Dr. Spencer distinguished four groups of fever following delivery; the first, often called "one-day fever," due to emotion, copremia, or other transitory cause; the second, due to complications which are not referable to the labor, including such febrile affections as influenza, scarlet fever, acute phthisis, and typhoid fever; the third, due to infection from preexisting pelvic lesions, such as pyosalpinx, appendicitis, etc.; the fourth, due to external infection, "puerperal fever," as we understand the term. Recent observations have shown that puerperal fever may have its origin in a number of micro-organisms; thus Whitridge Williams, among twenty-six cases, found streptococci, staphylococci, colon bacilli, gonococci, anaerobic bacilli, diphtheria bacilli, gas bacilli, and typhoid bacilli. In discussing the prophylaxis of puerperal fever, Dr. Spencer expressed the opinion that it is not necessary for a medical man to abstain from practice when attending such cases, as thorough disinfection will immediately enable him to attend other women with safety. After dealing with the question of local and operative treatment, the speaker pointed out the methods of remotely influencing puerperal fever, such as the nuclein treatment, saline infusion into the cellular tissue, and intravenous injection of antiseptics. Coming to the serum treatment, it was pointed out that a large number of observations had now been made upon its use, over 350 cases having been collected by a committee of the American Gynecological Society, and among these cases there was a mortality of thirty-three per cent. Probably the natural mortality was not greater than this. The conclusions to which Dr. Spencer had arrived were: (1) That as usually applied serum-therapy in the treatment of puerperal fever has no scientific basis; (2) that it has not lowered the mortality; (3) that it usually lowers the temperature and sometimes improves the general condition; (4) that its use is not free from danger.

SECTION ON STATE MEDICINE.

FIRST DAY—AUGUST 2D.

The Presidential Address in this section was delivered by DR. GEORGE WILSON who spoke with great frankness on the relations of bacterial research and methods of treatment to preventive medicine. He began by saying

that Pasteur's prophylactic inoculations are based on errors, and are the the outcome of illogical inductions, every one of them. The indiscriminate maiming and slaughtering of animal life with which these bacteriologic methods of reseach and experimentation have been inseparably associated cannot be proved to have saved one human life or to have lessened in any appreciable degree the load of human suffering.

There are certain infectious diseases one attack of which protects, as a rule, against any future attack. This can be more emphatically said of smallpox than of any other disease. That is why inoculation was practised for a time, and was so successful as far as the individual was concerned. Jenner concluded that if he inoculated with the matter contained in the vesicles of cow-pox instead of with smallpox matter he might be able to confer immunity against smallpox. He made the further discovery that he could confer immunity from smallpox by vaccinating from person to person. He made it clear that cowpox or vaccinia was a modified form of smallpox. Vaccination, therefore, induces vaccinia and vaccinia protects against smallpox because it is a modified form of the disease. Unlike smallpox itself it does not confer absolute immunity, as Jenner imagined it would. It only confers a modified degree of protection against smallpox because vaccinia is only a modified form of the disease itself by transmission of the virus through the cow or calf.

It has been admitted by Pasteur, Koch, and all of their followers that their methods of prophylaxis and cure are based on Jenner's happy inductive inspiration. In the first place, bacteriologists have failed to discover any pathogenic microbe either of smallpox or vaccinia which they can isolate with certainty. The few pathogenic microbes which bacteriologists have discovered associated with human disease, and which they can isolate and cultivate, are those of tuberculosis, diphtheria, enteric fever, cholera, and plague; but all these are found associated with necrosed tissues, and it is open to argument whether, instead of being labeled the unconditioned *causæ* of those respective diseases, they may not be performing a benign function in changing the necrosed tissues into harmless products, just as various kinds of micro-organisms are necessary to change filth and all dead organic matter into harmless matter. Then, again, vaccine lymph must be taken from the vesicle at a certain stage of development. When successfully used, as in vaccination, it is followed by manifestations of a definite disease known as vaccinia, with a well-defined incubation period and well-defined and characteristic symptoms—a varying amount of pyrexia, tumefaction at the point of vaccination—the vesicular and pustular stage.

In contradistinction to these facts, the serum of an immunized animal confers at the utmost only a doubtful and short lived immunity so doubtful as to be discarded altogether, and as a cure for smallpox it is of still more questionable efficacy. It was on these grounds that the speaker reiterated his statement that there is no legitimate analogy between Jenner's great discovery and these newer methods of prophylaxis or cure which are based on that discovery.

The medical profession has misled the public as to the cruelties and horrors which are perpetrated on animal life. No one who knows Lord Lister could accuse him of wilful misrepresentation, but when he stated, as he did in his speech at the opening of the bacteriological laboratory in Liverpool last year, that the actual pain involved in these experiments is commonly of the most trifling description he was guilty of a *suppressio veri* of the most palpable kind which could only be accounted for at the time by his ignorance of the actual facts. Admitting that in the mere operation of injecting a virus, whether cultivated or not, there may be little or no pain, the cruelty lies in the after-effects. The animal so innocently operated on may have to live days, weeks, or months with no anesthetic to assuage its sufferings and nothing but death to relieve.

And what triumphs has bacteriology achieved in stemming the tide of human disease on these empirical lines? Pasteur's antirabic vaccination is, as many believe, a delusion. Koch's tuberculin cure for phthisis has long since been labeled as worse than worthless. As a test even for bovine tuberculosis tuberculin possesses only a secondary and not a specific value. The much-vaunted antitoxin cure for diphtheria does not command the universal approval of even the physicians of the metropolitan fever hospitals. The serums used for the treatment of other diseases—such as the pneumococcic serum, the serum used for puerperal fever, and Sanarelli's serum for the cure of yellow fever—are all of them allowed to slip into the lap of forgetfulness.

The bacteriologist so dominates the public press that we almost seem to live in a bacillus stricken world. And so far as preventive medicine is concerned bacteriology has rather led us on false lines in assuming that the pathogenic microbe of any disease is the *causa causans* of that disease. We know that there are certain diseases which are notoriously infectious, therefore we isolate. We know that there are others which breed on filth, therefore we say be clean and insist on cleanliness of house and home, of the water we drink, of the food we eat, and of the air we breathe. Bacteriology has assisted, and largely assisted, preventive efforts at disinfection, isolation, and so on, but it can never confer immunity against disease except by using minimal doses of the virus of that disease, and that virus to be effectual can only be cultivated and bred in the living body, not cultivated artificially in organic media. We can only fight phthisis on the old lines, by improving heritage when that is possible, by improving the homes and conditions of life and labor which are always possible and always call loudly for interference, but this hunt after the tubercle bacillus is the insanest crusade ever instituted on illogical lines. The physician can never cure, he can only direct and assist Nature in eliminating the *materies morbi*, whatever it may be.

The whole of bacteriological theory and practice is steeped with commercial interests. Behring has patented his diphtheria antitoxic serum on the Continent; Koch for years has made a princely royalty out of his tuberculin. Little Denmark has boomed her butter trade through tuberculin. Why is Germany crowding itself with sana-

toria for consumptives? Just because Germany in 1889 passed an Act that every German with an income of £150 or less must insure against sickness or old age. Last year the number of Germans so insured amounted to over 11,000,000, and these insurance societies, to save their coffers, and receive their insurance subscriptions so long as they can, start these sanatoria in self-protection. That may be a great argument for the establishment of sanatoria, but it is also a great argument for the establishment of thrifty German ways.

DR. E. SEATON introduced a discussion on

RECENT VACCINATION LEGISLATION AND THE PREVENTION OF SMALLPOX.

In every case, he urged, there should be a report as to vesiculation and marks. Medical officers of health were, of course, anxious to isolate the earliest cases of smallpox, for which there should be suitable hospital accommodations, one of the most urgent needs of the present day.

DR. C. R. DRYSDALE thought the compromise of last year had satisfied very few people. The German Government had entirely eradicated smallpox since 1876, when the compulsory vaccination of infants and the revaccination of children aged 12 was enacted, and recommended that this admirable system should be adopted as soon as possible in the United Kingdom. DR. GROVES said that the Act of last year had caused a great awakening in the minds of members of the profession, especially of the public vaccinators, who now took hygienic precautions with respect to the patient and the patient's dwelling. The difficulty of the private practitioner in obtaining lymph is great; the Local Government Board now refuses to supply him with lymph. We could not in this country obtain that absolute protection against smallpox which exists in Germany until revaccination at adolescence is rendered compulsory. MR. H. MAY said the present Act is good in that it is increasing the number of vaccinations and the fees of vaccinators, and has undermined the position of the antivaccinators.

DR. SINCLAIR HOLDEN was of the opinion that glycerinated calf lymph deteriorates during the hot weather.

SECTION ON TROPICAL DISEASES.

FIRST DAY—AUGUST 2D.

GEORGE THIN, the president, in his opening address discussed the mosquito theory of malaria, and the establishment, in England, of two new schools of tropical diseases. He said in part: The causation of malarial fever by insects was referred to by Nott in 1848 at New Orleans as something already known, while in 1883 King published in America an excellent exposition of the mosquito theory. This theory was again suggested by Laveran in 1891, and also by Flügge in the same year. In 1894 Manson brought this problem prominently before medical men in this country, and urged that a mosquito theory was the best calculated to explain the various conditions of the problem. His suggestion was that the female mosquito fills herself with infected blood, lays her eggs some days later, and dies beside them. The water then becomes contaminated with the spores of the parasite of malaria, through which they might be taken into the human body, or might be breathed in the dust of dried-up pools, or the larvæ coming out of the eggs might eat it with the body of the mother; or the ground might become infected by mosquitoes containing the parasite falling and dying on it. King, Laveran, Bignami, Mendini, and Koch, on the other hand, considered that the infection is conveyed by the direct bite of the mosquito. Other observers have mentioned conditions which seemed to render a mosquito theory improbable. It was pointed out to me, for example, during a visit I paid to Sicily a few years ago, that a very narrow line separated the fever from the free-fever zone, whilst mosquitoes prevailed equally in both. Ross' discoveries at once and forever removed these objections. From the time he showed that to inoculate sparrows with proteosoma by the medium of the mosquito a special mosquito was necessary, it was evident that the next thing to do was to discover whether some particular genus or species of mosquito was the host of the parasite of malaria, and in August, 1897, Ross, when examining two "dappled-winged" mosquitoes which had been fed on a patient who had crescents in his blood found in the middle intestine certain round bodies which contained malarial pigment and which he rightly regarded as a development of the parasite.

While Ross was working in Calcutta with proteosoma, Grassi, during the summer of 1898, made an exhaustive study of the mosquitoes that prevail in different parts of Italy, and he found that there were many places where culex pipiens, the predominating mosquito, was common, but in which there was no indigenous malaria; whilst in places where malaria occurs he found a large mosquito, called by zoologists anopheles claviger. This species, characterized by four spots on the wings arranged like a capital T, may, he says, be defined as the true talebearer of the presence of malaria. Anopheles claviger bites sometimes during the day and night, but mostly half an hour before and half an hour after sunset.

Bignami's, first experiments in support of his theory of the direct inoculation of malaria by mosquito bites were made in 1894. The results were negative. Other experiments in 1898 also had a negative result; but guided by Grassi's information, mosquitoes were first brought on the 10th of last October from Maccarese, where fever prevailed, and were identified by Grassi as culex pencillaris, culex malariæ, and anopheles. During the last days of October the subject of the experiment began to suffer from symptoms of fever, which developed in an unmistakable manner on November 1st, and was cured on November 3rd by hypodermic injections of quinin. By November 7th the patient was perfectly free from fever, and rapidly regained his appetite and strength. On November 2d the blood carefully examined gave a negative result. On the 3d a few young ring-shaped parasites, moving or discoid, without pigment, with characteristic appearances of the summer-autumn fevers, were found, increasing in the course of the day and being very numerous in the afternoon, when very fine granules of pigment were found on the edge. Dried and stained prepa-

rations showed the characteristic appearances of the parasite. In the district in Rome in which the experiment was carried out there had not been a case of spontaneous fever within the memory of medical men, the center of Rome being absolutely free from fever. The type of fever was that which prevailed at Maccarese, from whence the mosquitoes were brought. This result has since been amply confirmed by further experiments by Bignami and Bastianelli, and it has now been conclusively shown that anopheles may be made to bite a man suffering from malarial fever, and if then kept at a proper temperature (30 C.) for the requisite number of days to allow the sporozoites to be present in the salivary glands, and then made to bite a healthy man who is free from malarial fever this man will, after the regular incubation period, develop malaria, and it is important to note that the parasite so conveyed from man to man through the mosquito retains its specific type. It further results from their experiments that very few bites are sufficient to convey fever; probably a single one sufficing. What is important is the species of mosquito and the stage of development of the parasite in its body. The process of development is the same as that observed and described by Ross in the proteosoma of the gray mosquito, and is common in many sporozoa. It consists essentially of increase of volume, accompanied by capsulation, which ends on the sixth day by division of the cell contents into very numerous small nuclei around which a little protoplasm is arranged, leaving a *nucleus de reliquat*. In tertain fevers it is the mature non-sporulating forms which develop in anopheles, the body of the parasite being paler, less refractive, and a little larger at the same stage of development, as compared with the crescent. The pigment is less in quantity and finer. The first phases of life in the intestine of the mosquito thus show a distinction between the crescent and tertain. The full-grown capsulated parasite is about seventy micromillimeters in size.

The discoveries of Kilburn and Smith, by which it was shown that the hematozoon which causes the Texas fever of cattle is transmitted from the tick, which is its temporary host to a second generation of ticks, by which it is again conveyed to cattle—the resemblance between the hematozoon of Texas fever and the human malarial parasite being so great that the proof that the one was conveyed by an insect was considered almost a proof that human malaria must be similarly conveyed even before it had been demonstrated that it is so—rendered it necessary to investigate whether in anopheles also the parasite is transmitted from parent to offspring. The Italian observers have, therefore, made a diligent examination of this question. So far (up to May 7th) all these experiments had been negative, and up to that date only those anopheles that had bitten human beings suffering from malaria had been shown to be capable of propagating the disease.

It will be seen from what I have related that the habits of anopheles claviger are matters of enormous importance to the human race. These insects pass the winter in human habitations and during this period their habits of migration are so much in abeyance that, although the anopheles in the dwelling-houses are found charged with human blood and contain the hematozoa of malaria, those in the adjoining stables and hen-houses do not contain the parasite. This has, of course, an important bearing on the question of prophylaxis. The genus anopheles has the palpi in both sexes about the same length as the proboscis. Five species of anopheles have been admitted for Europe. The first three without spots on the wings, are A. bifurcatus, A. villosus, and A. nigripes. The remaining two have the wings spotted—anopheles claviger (maculipennis) and A. pictus. Ficalbi thinks it is possible that the first three belong to one species. Grassi, Bignami, and Bastianelli have now extended their investigation to all the species of anopheles and have found that the parasite of malaria develops in all of them, although for Italy A. claviger is by far the most important. The anopheles claviger is widely diffused in Europe. It occurs in Scandinavia, Austria, Germany, Russia, Italy, and England. No fewer than seven species of anopheles are described as existing in the United States. Amongst them are A. punctipennis, A. claviger, and A. nigripes.

This year has seen the establishment of schools for tropical medicine in Great Britain, of which the interest and importance will, I hope, not be confined to these islands. The material requisite for the study of tropical diseases has been long utilized for the training of army surgeons, but not for civilian medical men destined to practice in the tropics. That this movement will not only be sustained, but that its scope will be largely increased, seems to me a matter of certainty. Two schools have been established, one in London at the Seamen's Hospital, and another at Liverpool, and we may confidently expect excellent work from both. But if we take into account the number of patients suffering from tropical diseases, and the opportunities of clinical study and experience, the great military hospital at Netley stands out prominently as offering conspicuous advantages with which London and Liverpool cannot compare. This school was organized and opened in 1860. If we look at the figures given in the reports of all three hospitals, it is evident that while Liverpool and Netley afford excellent schools for the study of malarial fevers, and that at Greenwich there is clearly a sufficient number of cases to enable the main features of the diseases to be studied, for the study of dysentery Netley and Greenwich afford the only available supplies, while the material at Netley far outnumbers that at Greenwich; and when we come to the most important diseases as hepatic abscess and hepatitis, in which clinical instruction is of so much importance, Netley appears to be the only school in this country in which adequate instruction can be given. The prevalence of these diseases among the civilian population in the tropics, the mortality and ill-health which they cause, and the frequent difficulty of diagnosis and treatment, render it a matter of the greatest consequence that medical men who are called on to deal with them should have instruction in a large hospital where there are groups of cases, and as Netley appears to be the only school in this country in which sufficient material for the study of

hepatic abscess and hepatitis occurs, a course there ought to be considered indispensable to every medical man who wishes or is obliged to thoroughly equip himself for tropical practice.

Whether the authorities could be brought to consider such a startling proposal as opening a military hospital to civilian practitioners I do not know. Innovations of this kind are too apt to be met with a *non possumus*, and certainly there is no precedent; but it is difficult to believe that an application for permission on behalf of medical men appointed or to be appointed to the Colonial Service would be met by a refusal. This great hospital, so long as the unfortunate supply of sick soldiers continues, is fitted to become a center of clinical instruction in tropical diseases not only for England, but for Europe.

The address led at once to a discussion of the advisability of requesting the Government to open its military school at Netley to civil practitioners for the study of tropical diseases. A number of remarks were made on both sides of the question, but a majority of those voting decided that it was inadvisable to press the matter at present, as the Government had recently lent its support to the two civil schools just opened.

DR. G. H. F. NUTTALL of Cambridge read an important and eminently scientific paper on

THE ROLE OF INSECTS, ARACHNIDS AND MYRIAPODS, IN THE SPREAD OF DISEASES DUE TO PARASITES.

After referring to the brilliant researches of Ross, Grassi, Bignami, and Bastianelli in the part played by insects in the distribution of disease, he proceeded to consider the passive and active parts played by insects as carriers of pathogenic organisms. As passive carriers the common fly is held to be the chief offender. Although unable to bite they may, from the character of their food or by their dejecta, spread several diseases — anthrax, plague, cholera, typhoid, frambosia, Egyptian ophthalmia, and Florida sore eye are capable of being thus dispersed, and experimental research has ascribed to pediculi a similar *rôle*. The evidence as to the active agency of insects was more negative. In fact, experiments made by the writer, some 250 in number, in reference to the part played in plague, anthrax, mouse septicemia, and chicken cholera, all gave negative results. In a large number of experiments made by allowing these insects to bite animals dying of the diseases named, and immediately afterward transferring them to healthy animals, not a single case of infection occurred. As regards the spread of animal parasites by insects, arachnids, and myriapods, Dr. Nuttall again considered their active and passive bearing. While serving as intermediary hosts, insects may perform a passive *rôle*, as when they are devoured by a host of the parasite they contain; and, again, an active *rôle*, when as in the case of the tick in Texas fever and malarial fever, they inoculate the parasite into a host by means of their probosces. On the other hand, insects, etc., without serving as intermediate hosts may serve as active and passive agents. As examples of their active *rôle* he cited the tsetse-fly disease, in which the infective agent is carried from one animal to another, and inoculation of the parasite itself takes place. Insects, etc., probably play a passive *rôle* in the distribution of animal parasites by the transportation of the eggs and their deposition in food, etc. As examples of this form of propagation he mentioned flies transporting eggs of tænia solium, trichocephalus, etc. Dr. Nuttall concluded by saying that in bacteriological studies what is required is more thorough work and less general theory. By microscopical specimens, photographs, and lantern-slides he showed the development of the malarial parasite.

DR. PATRICK MANSON read a paper on

FILARIAL PERIODICITY.

He dwelt chiefly on the question of what becomes of the filaria during the day. In answer to this question he was able to record the results of a post-mortem examination held in February, 1897. The cadaver had been known to be the subject of filaria nocturna, and death had taken place at 8.30 A.M. (by suicide)—that is to say, just about the time the filaria had retired from the peripheral circulation for the day. Seventeen adult filaria Bancrofti were found in an enormous lymphatic varix in the pelvis. By microscopic examination of the blood it was proved that the pulmonary veins, the pulmonary arteries, the lungs and blood-clots in the heart and aorta contained swarms of embryos. The brachial vena comites, the liver, and spleen contained but few filariæ, whilst in the bone marrow filariæ were absent. Dr. Manson could not supply any explanation of how these parasites maintain themselves in the arterial blood stream of the carotid or aorta. The facts seemed to point to the existence of some physiological product, the outcome of the activities of waking life, which either drives filaria nocturna from the surface of the body during the day, or attracts it to larger arteries during the night. What this substance may be it is for the physiologist to say.

SECTION ON LARYNGOLOGY AND OTOLOGY.

FIRST DAY—AUGUST 2D.

AT the opening of the Section the President, E. CRESSWELL BABER, reviewed the progress made in laryngology during the past thirty years. He mentioned the important discoveries of Meyer of Copenhagen, who, in 1869, read a paper in London on adenoid vegetations. In 1859, Markusovsky invented the speculum bearing his name. The real advance in anterior rhinoscopy was due more to the use of light reflected from a mirror with a central perforation than to any special form of speculum. The speaker also gave credit to Zuckerkandl for his work on the normal and pathological anatomy of the nose and its sinuses; to Hack for his study of reflex nasal neuroses; to Middledorpf for his invention of the galvanic cautery; to Jellinek for his introduction of cocain into nasal surgery, and to Litchtwitz for his work in chronic empyema. He also spoke of the general recognition of the importance of nasal respiration as one of the fruits of modern rhinology, and said that such progress in the past ought to encourage the workers in this department in their future labor.

DR. PIÉNE LACROIX of Paris showed an apparatus for the application of medicated vapors to the upper air tract. Formalin and menthol had yielded him good results in the treatment of tuberculous laryngitis, and he described experiments showing that the vapor inhibited the development of pus cocci and tubercle bacilli.

DR. BRONNER read a paper on

THE USE OF FORMALIN IN ATROPHIC RHINITIS.

He said he stopped short of strengths that caused irritation, using for irrigation a 1 in 1000 or 1 in 2000 solution, though for a coarse spray a rather stronger solution may be employed.

The President, DR. Snow of Syracuse, U. S. A., and DR. PEGLER described cases in which symptoms of Graves' disease had either supervened upon nasal operations or had been benefited by intranasal treatment.

DR. DUNDAS GRANT read a paper on

SOME FORMS OF LARYNGITIS CONSEQUENT ON PURULENT AFFECTIONS OF THE NOSE.

He referred to sphenoidal and posterior ethmoidal empyema, and ozena laryngis, describing the macerated aspect and inter-arytenoid swelling, and giving the differential diagnosis from phthisis and syphilis, and the relation to pachyderma.

DR. LOUIS BAR of Nice read a paper on

THE DIAGNOSIS OF CHRONIC FRONTAL SINUS EMPYEMA, AND MALIGNANT TUMORS OF THE NASAL FOSSÆ,

emphasizing particularly the impossibility in many cases of ascertaining the cause without exposing the sinus by external operation.

SECTION ON DISEASES OF CHILDREN.

FIRST DAY—AUGUST 2D.

The President, MR. EDMOND OWEN, delivered an address on

UNUNITED FRACTURES IN CHILDHOOD.

He cited a number of authors to prove the frequent occurrence of non union after fracture of the tibia and fibula in children. Operation for this lesion is usually unsuccessful. Non-union in adults is generally due to want of rest, and this may play its part in the non-union of childhood; but the trouble seemed rather to the speaker to be an atrophic one and he suggested that there is some subtle disturbance in the anterior horn of the cord interfering with the nutrition of the bone and rendering it weak and friable and subsequently interfering with its repair. He asked whether any one present had ever established consolidation in the ununited tibia of a child. For his part, he had never succeeded in such an attempt.

MR. TUBBY thought that soft bones are not proper objects for the operations of osteotomy or osteoclasis. He had observed acute fatty degeneration in an old-standing case.

DR. MAGUIRE opened the discussion on the treatment of pleuritic effusions in children from a medical point of view, including under this heading the operation of simple puncture and aspiration. Treatment was discussed in relation to such questions as the positive tension and resiliency of the thorax, the character and quantity of the fluid, displacement of the heart and abdominal viscera, and the general state of the patient.

SECTION ON PHARMACOLOGY AND THERAPEUTICS.

FIRST DAY—AUGUST 2D.

Upon opening the Section, DR. J. B. BRADBURY spoke a few words on the place of pharmacology in the medical curriculum. He regretted very much the growing tendency of most medical schools to require from candidates for diplomas less and less knowledge of the natural history, properties, composition, and action of drugs. While he had no wish to revert to the state of affairs when candidates were expected to have a minute knowledge of the distinctions between the different species of senna, for example, he thought that it is most important that all candidates should be thoroughly acquainted with the different remedies which they are going to prescribe.

A paper on

HEADACHES AND THEIR TREATMENT,

by DR. T. LAUDER BRUNTON, contained a quantity of interesting information, and brought out the connection of cerebral vasomotor disturbances and toxemia with the majority of headaches not due to local causes.

In the course of the discussion DR. DUNDAS GRANT pointed out the frequency of nasal troubles as a cause of headache, while PROFESSOR CLIFFORD ALLBUTT was disinclined to attach much importance to vasomotor disturbances. DR. HARRY CAMPBELL dwelt on headaches of syphilitic origin, and recommended the administration of dram doses of iodid of potassium, smaller doses often being iusufficient to modify this specific disease. Both he and DR. J. W. TYSON dwelt on climate as a factor in the production of headaches, while DR. HERSCHELL referred to over-distention and dilatation of the stomach as frequently associated with headache. On the other hand, DR. POPE referred to those numerous cases in which headache resulted from an empty stomach. These he attributed to a liver which soon ceases to secrete bile after the taking of a meal. DR. ST. CLAIR THOMSON had often found headache in association with chronic ear disease. DR. SARAT K. MULLICK referred to tropical diseases in connection with headache, and DR. MASTERS, speaking from his own experience, agreed with Dr. Brunton as to the vasomotor disturbances present in many forms of headache. The president quoted instances in which smoking had proved beneficial, while DR. DUFFAN referred to a variety which he has observed in coal-mine workers.

DR. BRUNTON, in replying, mentioned that altitudes and depths probably produced headaches by altering the atmospheric pressure in the sinuses.

REVIEWS.

INJURIES AND SURGICAL DISEASES OF THE FACE, MOUTH AND JAW. By JOHN SAYRE MARSHALL, M.D., Former Professor of Dental Pathology and Oral Surgery, and Emeritus Professor of Oral Surgery, in the Dental Department of Northwestern University. Philadelphia: The S. S. White Co.

THE author's plea for the creation of this work is that no text-book on this collateral branch of surgery is adapted to the recitation system of teaching. To attain this end the volume has been so written that each chapter ends with a number of questions reviewing the topics discussed therein. One must regret the introduction of such a plan into a text-book whose dignity cannot but be impaired thereby. Such elementary methods had best be reserved for quiz-compends.

In substance the ground is well covered, yet by being more exclusive the representative features, reflecting the author's individual experience, would not be so obscured, and the authoritative remarks would have come to the fore. Aside from the excellent illustrations there is nothing distinctively meritorious in the work to commend it to physicians who have numerous books on general surgery admirably covering the same ground; this volume, however, is deserving of a hearty welcome by students of dentistry, for whom it seems to be intended.

A SYSTEM OF MEDICINE. By many writers. Edited by THOMAS CLIFFORD ALLBUTT, M.D., LL.D., Regius Professor of Physic in the University of Cambridge. Volume VI. New York: The Macmillan Company, 1899.

THE sixth volume of Allbutt's system of medicine deals with the diseases of the circulatory and nervous systems, the former being continued from the previous volume. Among the contributors is Dr. William H. Welch, who has written two scholarly articles on thrombosis and embolism. The diseases of the muscles are considered in four chapters under the heads of myositis, myotonia congenita, idiopathic atrophy, hypertrophy and facial hemiatrophy, and hemihypertrophy. Dr. Bevan Lewis opens the series of articles on the nervous system in a consideration of its general pathology. The trophoneuroses are next discussed, then the diseases of the nerves, and finally the diseases of the spine.

This volume of the system does not differ from its predecessors in its general excellence. The value of the work is, indeed, enhanced by some of the monographs contained in the book under discussion. We are not acquainted with any system its superior in scientific or literary excellence.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION. Twenty-second Annual Meeting, held in Princeton, N. J., May 31 and June 1, and in New York City, June 2, 1898. Concord, N. H.: The Rumford Press, 1899.

THOSE interested in diseases of the skin will find many valuable papers in the *Transactions* of 1898. To review the important papers in detail would mean to review nearly all of those read. A valuable contribution is the one by Gilchrist on the question of malignant growths arising from pigmented moles. These are usually regarded as sarcomatous in nature, but Gilchrist agrees with Unna, who was the first to oppose this view in 1892, that they arise from the rete layer of the epidermis and not from endothelial or connective-tissue cells, and hence should be classed with the carcinomata. Some excellent drawings by the author show the histologic features very clearly and seem to confirm this view.

TEXT-BOOK OF OPHTHALMOLOGY. By DR. ERNST FUCHS, Professor of Ophthalmology in the University of Vienna. Authorized Translation. Revised from the Seventh German edition. By A. DUANE, M.D., Assistant-surgeon in the Ophthalmic and Aural Institute, New York. Illustrated. Second American edition. New York: D. Appleton & Co., 1899.

SINCE the first edition of this book was published five German editions have been issued, and Fuch's work is accepted as the model ophthalmological text-book in matter as well as in presentation. The data are selected and presented with such judgment and care, the information is so complete and fresh, the scientific analysis so precise that the most abstruse chapters are simplified and made intelligible. Much of the pleasure derived from reading this book depends upon the fact that the author has everywhere substituted the results of experience, mainly personal, for the customary theoretical deductions or traditions, while the whole subject matter is illustrated by a style which is as graceful as it is clear and simple. In this regard the English version is fully worthy of the original, and the translator is to be congratulated on the felicitous manner in which he has accomplished his task.

The second American edition represents an essentially improved form of work which has already proved valuable. It bears everywhere the marks of thorough revision, of additions, and corrections, notably in the sections on functional examination, the pathology of corneal and conjunctival diseases (especially the parts relating to ulcus serpens and diphtheria), and the diseases of the fundus. The translator has added a short chapter on the subject of heterophoria, judging that the presentation by Professor Fuchs, while admirable in point of matter and lucidity, might appear too brief to many readers in this country, where so much attention is given to muscular anomalies. Another section inserted deals with the use of homatropin and other cycloplegics, and the general subject of the correction of refractive errors. The book is thoroughly abreast of the times, and presents an excellent summary of ophthalmological science as we know it to-day.

REGULATIONS FOR THE GUIDANCE OF SURGEONS in the Medical Examination of Recruits for the Connecticut National Guard. Middletown, Conn.: Pelton & King, 1899.

THIS little volume has been prepared by Brigadier-General J. Francis Calef, Surgeon-General, C. N. G. It con

tains besides general instructions to examining surgeons, an enumeration of the conditions exempting from military duty and of disqualifications for service in regular and in State regiments. Test-types for determining the vision of recruits accompany the volume, and the text of the Geneva Convention is appended.

HAY-FEVER AND ITS SUCCESSFUL TREATMENT. By W. C. HOLLOPETER, A.M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College of Philadelphia. Second edition. Philadelphia: P. Blakiston's Sons & Co., 1899.

THE call for a second edition of this little monograph within a year is evidence of the widespread interest taken in the subject-matter, as well as of the practical excellence of the work itself. The thorough clinical study of hay-fever, and the exhaustive review of the literature devoted to it, are again presented, while the author has revised and enlarged the text so as to include the special treatment of each of the various types of hay-fever cases. The bibliographic section is made to include the most recent publications, and the work is a complete presentment of a most important topic.

LABORATORY WORK IN BACTERIOLOGY. By FREDERICK G. NOVY, SC.D., M.D., Junior Professor of Hygiene and Physiological Chemistry in the University of Michigan. Second edition. Revised and enlarged. Ann Arbor: George Wahr, 1899.

THIS work is not offered as a complete text-book of bacteriology, still it contains a vast amount of important matter on the subject, and is admirably arranged as a working guide for the student. The present edition is a work of nearly 600 pages, divided into fifteen chapters, and contains many illustrations, most of which deal with the apparatus necessary in laboratory technic. Illustration of the growth and appearances of the various bacteria have been omitted purposely, and the book is interleaved with blank pages, so that the student may draw what he observes.

We note with particular satisfaction that great care has been given to those minute details in technic that are so important to every beginner, and that are so frequently missing in the ordinary books on the subject, and can heartily commend the work as a safe guide to all students interested in this important science.

THE TREATMENT OF DISEASE BY PHYSICAL METHODS. By THOMAS STRETCH DOWSE, M.D., Abd., F.R.C.P., Edin., formerly Physician-Superintendent Central London Sick Asylum; President North London Medical Society. New York: E. B. Treat & Co., 1899.

UNDER this title the author presents, in unchanged form, his "Lectures on Massage and Electricity in the Treatment of Disease." As under the old name the work is devoted for the most part to a discussion of the theoretical aspects and practical application of massage. Each chapter corresponds to a lecture—the first elucidating the mechanical principles of massage and their chemico-physiological relations; the succeeding lectures dealing with the various kinds of massage and their administration to the different parts of the body (freely illustrated). A rather original lecture is devoted to the Weir Mitchell "rest cure." The last three chapters deal, respectively, with "The Schott Treatment in Diseases of the Heart," "Electro-Physics," and "Electro-Therapeutics."

The writer has imparted a distinct clinical interest to his lectures by keeping before the reader's mind the interdependence of physical and other therapeutic measures in the successful treatment of various diseases. He dwells with emphasis on the importance of adopting the physical treatment to the condition of the patient.

THERAPEUTIC HINTS.

To Prevent Loosening of Teeth.—When it is desirable to counteract a tendency to this condition the following mouth wash is recommended:

℞	Ac. tannici		ʒ ii
	Tinct. iodi		ʒ i
	Potassii iodidi		gr. xv
	Tinct. myrrhæ		*m.* lxxx
	Aq. rosæ		℥ vi.

M. Sig. A teaspoonful in water to rinse mouth every two hours.

For Seasickness.—

℞	Cocainæ hydrochlorat. }	aa	gr. i
	Ext. opii }		
	Pulv. altheæ		q.s.

M. Ft. pil. No. VI. Sig. One pill every two hours.—*Eid.*

For Hemicrania.—

℞	Antipyrin }	aa	gr. xlv.
	Sodii bicarb. }		

M. Div. in pulv. No. VI. Sig. One powder every half hour (from 2 to 4 doses a day).

Or the following:

℞	Antipyrin		gr. xlv
	Caffeinæ citrat.		gr. x
	Sparteini sulphat.		gr. ii.

M. Div. in pulv. No. VI. Sig. As above.

At night the following pill is taken:

℞	Ext. belladonnæ }	aa	gr. i.
	Pulv. belladonnæ }		
	Resinæ podophylli }		

M. Ft. pil. No. VI. Sig. One pill at night.—*Grasset.*

For Scabies.—

℞	Sulphuris precip. }	aa	℥ ss
	Bals. Peruviani }		
	Resorcini }	aa	gr. xxiv
	Ac. salicylici }		
	Vaselini }	aa	℥ i ʒ vi.
	Lanolini }		

M. Ft. unguentum. Sig. External use.—*Besnier.*